

### ***Laboratories Receiving MAPEP Vegetation Standard***

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ADEM01	Alabama Department of Environmental Management
AFOH01	AFIOH/SDRR
ANLA01	Argonne National Laboratory/Analytical Chemistry Lab.
ANTE01	Paragon Analytics a Division of DataChem Laboratories, Inc.
ARSL01	American Radiation Services Inc.
ATLI01	ATL International, Inc.
CDHS01	California Department of Health Services
CHMH01	222-S Laboratory
CMRC01	Carlsbad Environmental Monitoring and Research Center
CORE02	STL Denver
DBCL01	Durateck, Inc. - Bear Creek Lab
DEHS01	Department of Environmental Health & Safety
EANR99	The Supreme Council for the Environment and Natural Resources
ENES01	Energy Northwest Environmental Services
EPAL01	U. S. EPA Office of Radiation and Indoor Air
ERCL01	Public Health Laboratories
ERLG01	Environmental Radiation Laboratory
ERPD99	Environmental Radiation Protection Division
FDHE01	Florida Dept of Health Environmental Laboratory
FDOH01	Florida Dept. of Health, Mobile Environmental Radiological Lab
FNAL01	Fermi National Accelerator Laboratory (FermiLab)
GENE01	General Engineering Laboratories, LLC
GPCL01	Georgia Power Company Environmental Laboratory
GPLP01	GPL Laboratories, LLLP
IAEA99	International Atomic Energy Agency
ISUP01	ISU - Department of Physics/Health Physics/EAL
JAEC99	Radiation Measurements Laboratory
KAST99	Environmental Studies Laboratory
LAWR01	LAWRENCE BERKELEY NATIONAL LABORATORY
LAWR02	Lawrence Livermore National Laboratory
LOCK03	RADIATION MEASUREMENTS LABORATORY/AEDL
MART01	USEC, Inc.
MART02	United States Enrichment Corporation
MART03	Radioactive Material Analysis Laboratory
MDPH01	MDPH-Radiation Control Program
NARL01	National Air and Radiation Environmental Laboratory
NESI01	BWXT Services-Nuclear Environmental Laboratory Services
NJDH01	New Jersey Dept. of Health & Senior Services, PHEL, ECLS
NRLL99	National Radiation Laboratory
NTSI01	Nuclear Technology Services, Inc.
ODHL01	Ohio Department of Health Laboratory
ORIS01	ORISE/ESSAP
OTLI01	Outreach Technologies, Inc.
PBRF01	NASA Plum Brook Reactor Facility Lab
QUAN01	STL St. Louis
QUAN03	SEVERN TRENT LABORATORIES RICHLAND

RMCL99	Royal Scientific Society - Radiation Measurements Lab
RPSC01	Radiation Protection Service
RSAL01	RSA Laboratories, Inc.
RSIR99	Instituto de Radioprotecao e Dosimetria
SCAL01	Sanford Cohen and Associates, Inc.
SEML01	SRS Environmental Monitoring Laboratory
SNRC99	Soreq NRC
SOUT01	Southwest Research Institute
SRPD01	Sandia National Laboratories, Radiation Protection Sample Diagnostics
SSFL01	Santa Susana Field Laboratory
TDHL01	Texas Department of State Health Services Laboratory
TELE01	TELEDYNE BROWN ENGINEERING - ENVIRONMENTAL SERVICES
TELE02	Environmental, Inc., Midwest Lab
TMAE01	Eberline Services, Inc.
TMAO01	EBERLINE SERVICES OAK RIDGE LABORATORY
TMAR01	Eberline Services
UQNP99	University of Qatar - Nuclear Physics Lab
WEST03	Waste Sampling and Characterization Facility
WEST04	PACE ANALYTICAL SERVICES WALTZ MILL SITE
WIPH01	WI, DPH, Radiation Protection Section
WIPP01	WIPP Laboratories
WSHL01	Wisconsin State Laboratory of Hygiene
YAEC01	Framatome ANP Environmental Laboratory

## *Labs Not Reporting RdV*

### LAB\_CODE LAB\_NAME

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ANLA01	Argonne National Laboratory/Analytical Chemistry Lab.
CDHS01	California Department of Health Services
CHMH01	222-S Laboratory
CMRC01	Carlsbad Environmental Monitoring and Research Center
DBCL01	Durateck, Inc. - Bear Creek Lab
DEHS01	Department of Environmental Health & Safety
EANR99	The Supreme Council for the Environment and Natural Resource
ENES01	Energy Northwest Environmental Services
EPAL01	U. S. EPA Office of Radiation and Indoor Air
IAEA99	International Atomic Energy Agency
ISUP01	ISU - Department of Physics/Health Physics/EAL
KAST99	Environmental Studies Laboratory
OTLI01	Outreach Technologies, Inc.
RSAL01	RSA Laboratories, Inc.
SSFL01	Santa Susana Field Laboratory
UQNP99	University of Qatar - Nuclear Physics Lab

# Mixed Analyte Performance Evaluation Program

## Statistical Summary

Sample ID: MAPEP-05-RdV14

Radiological Vegetation Standard

Analyte	T(1)	A(2)	Grand Mean	Std. Dev.	Reference Value	Analyte Text	Acceptance Limits	Units
Uranium-Total	1	1			28.0			
Uranium-235	1	1			0.202			
Uranium-238	1	1			27.8			
Americium-241	35	27	0.22	0.03	0.23		0.16 - 0.30	Bq/sample
Cesium-134	51	47	4.03	0.52	4.09		2.86 - 5.32	Bq/sample
Cesium-137	52	47	5.56	0.61	5.43		3.80 - 7.06	Bq/sample
Cobalt-57	51	39	14.18	1.66	13.3		9.31 - 17.29	Bq/sample
Cobalt-60	52	48	4.64	0.43	4.43		3.10 - 5.76	Bq/sample
Manganese-54	51	46	6.77	0.69	6.57		4.60 - 8.54	Bq/sample
Plutonium-238	27	21				False Positive Test		Bq/sample
Plutonium-239/240	27	23	0.15	0.01	0.164		0.11 - 0.21	Bq/sample
Potassium-40	12							
Strontium-90	26	21	2.31	0.24	2.42		1.69 - 3.15	Bq/sample
Uranium-234/233	25	23	0.33	0.03	0.333		0.23 - 0.43	Bq/sample
Uranium-235	2							
Uranium-238	25	23	0.34	0.03	0.346		0.24 - 0.45	Bq/sample
Zinc-65	51	44	10.93	0.88	10.2		7.14 - 13.26	Bq/sample

**Note:** Outliers are excluded from the statistical summary.  
Outliers are defined as laboratory data with a bias greater than 30 percent.  
(1) T = Total Number of Laboratories Reporting Analyte.  
(2) A = Number of Laboratories with 'Acceptable' Performance.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

ADEM01

Alabama Department of Environmental Management  
Central Laboratory  
Montgomery AL 36109

Sample ID: MAPEP-05-RdV14

### Radiological Vegetation Standard

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	NR	0.23				0.16 - 0.30			
Cesium-134	3.85	4.09	A		-5.9	2.86 - 5.32	0.19		Bq/sample
Cesium-137	5.37	5.43	A		-1.1	3.80 - 7.06	0.25		Bq/sample
Cobalt-57	14.3	13.3	A		7.5	9.31 - 17.29	0.46		Bq/sample
Cobalt-60	4.59	4.43	A		3.6	3.10 - 5.76	0.14		Bq/sample
Manganese-54	6.70	6.57	A		2.0	4.60 - 8.54	0.28		Bq/sample
Plutonium-238	NR								
Plutonium-239/240	NR	0.164				0.11 - 0.21			
Strontium-90	1.63	2.42	N		-32.6	1.69 - 3.15	0.06		Bq/sample
Uranium-234/233	NR	0.333				0.23 - 0.43			
Uranium-238	NR	0.346				0.24 - 0.45			
Zinc-65	11.3	10.2	A		10.8	7.14 - 13.26	0.57		Bq/sample

### Flags:

A = Result acceptable  
W = Result acceptable with warning  
N = Result not acceptable  
L = Uncertainty potentially too low  
H = Uncertainty potentially too high  
Q = Participant should evaluate reported value  
QL = Quantitation Limit  
RW = Report Warning  
NR = Not Reported

Bias <= 20%  
20% < Bias <= 30%  
Bias > 30%

### Flag Text

1 - False Positive  
2 - False Negative  
4 - Sensitivity Evaluation  
5 - Total Metal  
6 - Not Evaluated  
7 - DL > CLP Limit  
9 - Check QL  
10 - Check Isomer  
11 - False Positive Test, Value Not Reported  
14 - Solubility Issue  
15 - Refractory  
16 - Reported zero uncertainty  
17 - NOT DETECTED, reported a statistically zero result.  
18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

AFOH01

AFIOH/SDRR

Sample ID: MAPEP-05-RdV14

2350 Gillingham Dr

Radiological Vegetation Standard

Brooks City-Base

TX

78235-5103

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	NR	0.23				0.16 - 0.30			
Cesium-134	3.43	4.09	A		-16.1	2.86 - 5.32	0.24		Bq/sample
Cesium-137	4.92	5.43	A		-9.4	3.80 - 7.06	0.37		Bq/sample
Cobalt-57	10.95	13.3	A		-17.7	9.31 - 17.29	0.47		Bq/sample
Cobalt-60	4.09	4.43	A		-7.7	3.10 - 5.76	0.21		Bq/sample
Manganese-54	6.00	6.57	A		-8.7	4.60 - 8.54	0.38		Bq/sample
Plutonium-238	NR								
Plutonium-239/240	NR	0.164				0.11 - 0.21			
Strontium-90	NR	2.42				1.69 - 3.15			
Uranium-234/233	NR	0.333				0.23 - 0.43			
Uranium-238	NR	0.346				0.24 - 0.45			
Zinc-65	9.31	10.2	A		-8.7	7.14 - 13.26	0.73		Bq/sample

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20% < Bias <= 30%

Bias > 30%

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# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

ANTE01

Paragon Analytics a Division of DataChem Laboratories,  
225 Commerce Drive  
Fort Collins CO 80524-

Sample ID: MAPEP-05-RdV14

### Radiological Vegetation Standard

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	0.209	0.23	A		-9.1	0.16 - 0.30	0.036		Bq/sample
Cesium-134	3.37	4.09	A		-17.6	2.86 - 5.32	0.41		Bq/sample
Cesium-137	4.83	5.43	A		-11.1	3.80 - 7.06	0.60		Bq/sample
Cobalt-57	12.2	13.3	A		-8.3	9.31 - 17.29	1.4		Bq/sample
Cobalt-60	4.15	4.43	A		-6.3	3.10 - 5.76	0.51		Bq/sample
Manganese-54	6.34	6.57	A		-3.5	4.60 - 8.54	0.78		Bq/sample
Plutonium-238	0.00087		A				0.00069		Bq/sample
Plutonium-239/240	0.153	0.164	A		-6.7	0.11 - 0.21	0.013		Bq/sample
Potassium-40	31.1						4.5		Bq/sample
Strontium-90	2.19	2.42	A		-9.5	1.69 - 3.15	0.26		Bq/sample
Uranium-234/233	0.360	0.333	A		8.1	0.23 - 0.43	0.059		Bq/sample
Uranium-238	0.368	0.346	A		6.4	0.24 - 0.45	0.060		Bq/sample
Zinc-65	10.1	10.2	A		-1.0	7.14 - 13.26	1.3		Bq/sample

### Flags:

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H = Uncertainty potentially too high  
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QL = Quantitation Limit  
RW = Report Warning  
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Bias <= 20%  
20% < Bias <= 30%  
Bias > 30%

### Flag Text

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2 - False Negative  
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5 - Total Metal  
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10 - Check Isomer  
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# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

ARSL01

American Radiation Services Inc.

Sample ID: MAPEP-05-RdV14

2609 North River Road

Radiological Vegetation Standard

Port Allen

LA

70767

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	NR	0.23				0.16 - 0.30			
Cesium-134	28	4.09	N		584.6	2.86 - 5.32	1.28		Bq/sample
Cesium-137	53.6	5.43	N		887.1	3.80 - 7.06	3.17		Bq/sample
Cobalt-57	117	13.3	N		779.7	9.31 - 17.29	5.14		Bq/sample
Cobalt-60	39.3	4.43	N		787.1	3.10 - 5.76	1.87		Bq/sample
Manganese-54	48.7	6.57	N		641.2	4.60 - 8.54	3.06		Bq/sample
Plutonium-238	NR								
Plutonium-239/240	NR	0.164				0.11 - 0.21			
Strontium-90	NR	2.42				1.69 - 3.15			
Uranium-234/233	NR	0.333				0.23 - 0.43			
Uranium-238	NR	0.346				0.24 - 0.45			
Zinc-65	76.6	10.2	N		651.0	7.14 - 13.26	5.93		Bq/sample

### Flags:

A = Result acceptable  
 W = Result acceptable with warning  
 N = Result not acceptable  
 L = Uncertainty potentially too low  
 H = Uncertainty potentially too high  
 Q = Participant should evaluate reported value  
 QL = Quantitation Limit  
 RW = Report Warning  
 NR = Not Reported

Bias <= 20%  
 20% < Bias <= 30%  
 Bias > 30%

### Flag Text

1 - False Positive  
 2 - False Negative  
 4 - Sensitivity Evaluation  
 5 - Total Metal  
 6 - Not Evaluated  
 7 - DL > CLP Limit  
 9 - Check QL  
 10 - Check Isomer  
 11 - False Positive Test, Value Not Reported  
 14 - Solubility Issue  
 15 - Refractory  
 16 - Reported zero uncertainty  
 17 - NOT DETECTED, reported a statistically zero result.  
 18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

ATL101

ATL International, Inc.

Sample ID: MAPEP-05-RdV14

20010 Century Blvd, Suite 500

Radiological Vegetation Standard

Germantown

MD

20874

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	0.2397	0.23	A		4.2	0.16 - 0.30	0.0621	H	Bq/sample
Cesium-134	3.6060	4.09	A		-11.8	2.86 - 5.32	0.1840		Bq/sample
Cesium-137	5.2334	5.43	A		-3.6	3.80 - 7.06	0.3626		Bq/sample
Cobalt-57	14.9320	13.3	A		12.3	9.31 - 17.29	0.8540		Bq/sample
Cobalt-60	4.3612	4.43	A		-1.6	3.10 - 5.76	0.2128		Bq/sample
Manganese-54	6.4270	6.57	A		-2.2	4.60 - 8.54	0.5670		Bq/sample
Plutonium-238	0.0008		A				0.0010		Bq/sample
Plutonium-239/240	0.1456	0.164	A		-11.2	0.11 - 0.21	0.0200		Bq/sample
Strontium-90	2.3355	2.42	A		-3.5	1.69 - 3.15	0.1409		Bq/sample
Uranium-234/233	0.3108	0.333	A		-6.7	0.23 - 0.43	0.0470		Bq/sample
Uranium-238	0.3184	0.346	A		-8.0	0.24 - 0.45	0.0481		Bq/sample
Zinc-65	10.6780	10.2	A		4.7	7.14 - 13.26	0.8240		Bq/sample

### Flags:

A = Result acceptable

W = Result acceptable with warning 20% < Bias <= 30%

N = Result not acceptable Bias > 30%

L = Uncertainty potentially too low

H = Uncertainty potentially too high

Q = Participant should evaluate reported value

QL = Quantitation Limit

RW = Report Warning

NR = Not Reported

Bias <= 20%

### Flag Text

1 - False Positive

2 - False Negative

4 - Sensitivity Evaluation

5 - Total Metal

6 - Not Evaluated

7 - DL > CLP Limit

9 - Check QL

10 - Check Isomer

11 - False Positive Test, Value Not Reported

14 - Solubility Issue

15 - Refractory

16 - Reported zero uncertainty

17 - NOT DETECTED, reported a statistically zero result.

18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

CORE02

STL Denver  
4955 Yarrow St  
Arvada CO 80002

Sample ID: MAPEP-05-RdV14

### Radiological Vegetation Standard

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	0.191	0.23	A		-17.0	0.16 - 0.30	0.009		Bq/sample
Cesium-134	3.54	4.09	A		-13.4	2.86 - 5.32	0.14		Bq/sample
Cesium-137	5.06	5.43	A		-6.8	3.80 - 7.06	0.15	L	Bq/sample
Cobalt-57	12.74	13.3	A		-4.2	9.31 - 17.29	0.23	L	Bq/sample
Cobalt-60	4.11	4.43	A		-7.2	3.10 - 5.76	0.59		Bq/sample
Manganese-54	6.33	6.57	A		-3.7	4.60 - 8.54	0.16	L	Bq/sample
Plutonium-238	0.001		A				0.001		Bq/sample
Plutonium-239/240	0.157	0.164	A		-4.3	0.11 - 0.21	0.009		Bq/sample
Potassium-40	3.74						0.68		Bq/sample
Strontium-90	2.037	2.42	A		-15.8	1.69 - 3.15	0.029	L	Bq/sample
Uranium-234/233	0.315	0.333	A		-5.4	0.23 - 0.43	0.014		Bq/sample
Uranium-235	0.022						0.003		Bq/sample
Uranium-238	0.367	0.346	A		6.1	0.24 - 0.45	0.016		Bq/sample
Zinc-65	10.42	10.2	A		2.2	7.14 - 13.26	0.31	L	Bq/sample

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Bias > 30%

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5 - Total Metal  
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# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

ERCL01

Public Health Laboratories

Sample ID: MAPEP-05-RdV14

1610 N.E. 150 th Srteet

Radiological Vegetation Standard

Shoreline

WA

98155-9701

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	0.245	0.23	A		6.5	0.16 - 0.30	0.015		Bq/sample
Cesium-134	3.67	4.09	A		-10.3	2.86 - 5.32	0.12		Bq/sample
Cesium-137	5.10	5.43	A		-6.1	3.80 - 7.06	0.19		Bq/sample
Cobalt-57	14.9	13.3	A		12.0	9.31 - 17.29	0.3	L	Bq/sample
Cobalt-60	4.85	4.43	A		9.5	3.10 - 5.76	0.12	L	Bq/sample
Manganese-54	6.31	6.57	A		-4.0	4.60 - 8.54	0.29		Bq/sample
Plutonium-238	0		A				0.004		Bq/sample
Plutonium-239/240	0.119	0.164	W		-27.4	0.11 - 0.21	0.007		Bq/sample
Strontium-90	2.41	2.42	A		-0.4	1.69 - 3.15	0.17		Bq/sample
Uranium-234/233	0.329	0.333	A		-1.2	0.23 - 0.43	0.013		Bq/sample
Uranium-238	0.315	0.346	A		-9.0	0.24 - 0.45	0.013		Bq/sample
Zinc-65	11.6	10.2	A		13.7	7.14 - 13.26	0.5		Bq/sample

### Flags:

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# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

ERLG01

Environmental Radiation Laboratory

Sample ID: MAPEP-05-RdV14

Georgia Institute of Tech.

Radiological Vegetation Standard

Atlanta GA 30332

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	.5	0.23	N		117.4	0.16 - 0.30	.1		Bq/sample
Cesium-134	8.5	4.09	N		107.8	2.86 - 5.32	1		Bq/sample
Cesium-137	11	5.43	N		102.6	3.80 - 7.06	1		Bq/sample
Cobalt-57	190	13.3	N		1328.6	9.31 - 17.29	20		Bq/sample
Cobalt-60	8.5	4.43	N		91.9	3.10 - 5.76	1		Bq/sample
Manganese-54	13	6.57	N		97.9	4.60 - 8.54	1		Bq/sample
Plutonium-238	NR		N	11					
Plutonium-239/240	.15	0.164	A		-8.5	0.11 - 0.21	.01		Bq/sample
Strontium-90	2.3	2.42	A		-5.0	1.69 - 3.15	.2		Bq/sample
Uranium-234/233	NR	0.333				0.23 - 0.43			
Uranium-238	NR	0.346				0.24 - 0.45			
Zinc-65	120	10.2	N		1076.5	7.14 - 13.26	20		Bq/sample

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# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

ERPD99

Environmental Radiation Protection Division  
Mubarak Al-Kabeer Street, al-Awqaf Compl  
Sharq Kuwait 656

Sample ID: MAPEP-05-RdV14

### Radiological Vegetation Standard

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	NR	0.23				0.16 - 0.30			
Cesium-134	4.75	4.09	A		16.1	2.86 - 5.32	0.93		Bq/sample
Cesium-137	5.64	5.43	A		3.9	3.80 - 7.06	0.83		Bq/sample
Cobalt-57	15.00	13.3	A		12.8	9.31 - 17.29	1.25		Bq/sample
Cobalt-60	4.82	4.43	A		8.8	3.10 - 5.76	0.89		Bq/sample
Manganese-54	6.93	6.57	A		5.5	4.60 - 8.54	0.93		Bq/sample
Plutonium-238	NR								
Plutonium-239/240	NR	0.164				0.11 - 0.21			
Potassium-40	26.54						2.46		Bq/sample
Strontium-90	NR	2.42				1.69 - 3.15			
Uranium-234/233	NR	0.333				0.23 - 0.43			
Uranium-238	NR	0.346				0.24 - 0.45			
Zinc-65	11.92	10.2	A		16.9	7.14 - 13.26	1.05		Bq/sample

### Flags:

A = Result acceptable  
W = Result acceptable with warning  
N = Result not acceptable  
L = Uncertainty potentially too low  
H = Uncertainty potentially too high  
Q = Participant should evaluate reported value  
QL = Quantitation Limit  
RW = Report Warning  
NR = Not Reported

Bias <= 20%  
20% < Bias <= 30%  
Bias > 30%

### Flag Text

1 - False Positive  
2 - False Negative  
4 - Sensitivity Evaluation  
5 - Total Metal  
6 - Not Evaluated  
7 - DL > CLP Limit  
9 - Check QL  
10 - Check Isomer  
11 - False Positive Test, Value Not Reported  
14 - Solubility Issue  
15 - Refractory  
16 - Reported zero uncertainty  
17 - NOT DETECTED, reported a statistically zero result.  
18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

FDHE01

Florida Dept of Health Environmental Laboratory

Sample ID: MAPEP-05-RdV14

PO Box 680069

Radiological Vegetation Standard

Orlando

FL

32868-0069

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	0.15	0.23	N		-34.8	0.16 - 0.30	0.04	H	Bq/sample
Cesium-134	3.81	4.09	A		-6.8	2.86 - 5.32	0.06	L	Bq/sample
Cesium-137	3.00	5.43	N		-44.8	3.80 - 7.06	0.08	L	Bq/sample
Cobalt-57	5.90	13.3	N		-55.6	9.31 - 17.29	0.04	L	Bq/sample
Cobalt-60	2.38	4.43	N		-46.3	3.10 - 5.76	0.06	L	Bq/sample
Manganese-54	3.96	6.57	N		-39.7	4.60 - 8.54	0.10	L	Bq/sample
Plutonium-238	NR								
Plutonium-239/240	NR	0.164				0.11 - 0.21			
Potassium-40	30.1						0.8		Bq/sample
Strontium-90	NR	2.42				1.69 - 3.15			
Uranium-234/233	NR	0.333				0.23 - 0.43			
Uranium-238	NR	0.346				0.24 - 0.45			
Zinc-65	5.2	10.2	N		-49.0	7.14 - 13.26	0.2		Bq/sample

### Flags:

A = Result acceptable

W = Result acceptable with warning 20% < Bias <= 30%

N = Result not acceptable

L = Uncertainty potentially too low

H = Uncertainty potentially too high

Q = Participant should evaluate reported value

QL = Quantitation Limit

RW = Report Warning

NR = Not Reported

Bias <= 20%

20% < Bias <= 30%

Bias > 30%

### Flag Text

1 - False Positive

2 - False Negative

4 - Sensitivity Evaluation

5 - Total Metal

6 - Not Evaluated

7 - DL > CLP Limit

9 - Check QL

10 - Check Isomer

11 - False Positive Test, Value Not Reported

14 - Solubility Issue

15 - Refractory

16 - Reported zero uncertainty

17 - NOT DETECTED, reported a statistically zero result.

18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

FDOH01

Florida Dept. of Health, Mobile Environmental Radiologic  
PO Box 680069  
Orlando FL 32868-0069

Sample ID: MAPEP-05-RdV14

### Radiological Vegetation Standard

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	0.18	0.23	W		-21.7	0.16 - 0.30	0.04	H	Bq/sample
Cesium-134	3.5	4.09	A		-14.4	2.86 - 5.32	0.1	L	Bq/sample
Cesium-137	5.1	5.43	A		-6.1	3.80 - 7.06	0.2		Bq/sample
Cobalt-57	9	13.3	N		-32.3	9.31 - 17.29	0.1	L	Bq/sample
Cobalt-60	4.4	4.43	A		-0.7	3.10 - 5.76	0.1	L	Bq/sample
Manganese-54	6.5	6.57	A		-1.1	4.60 - 8.54	0.2		Bq/sample
Plutonium-238	NR								
Plutonium-239/240	NR	0.164				0.11 - 0.21			
Strontium-90	NR	2.42				1.69 - 3.15			
Uranium-234/233	NR	0.333				0.23 - 0.43			
Uranium-238	NR	0.346				0.24 - 0.45			
Zinc-65	10.1	10.2	A		-1.0	7.14 - 13.26	0.4		Bq/sample

### Flags:

A = Result acceptable  
W = Result acceptable with warning  
N = Result not acceptable  
L = Uncertainty potentially too low  
H = Uncertainty potentially too high  
Q = Participant should evaluate reported value  
QL = Quantitation Limit  
RW = Report Warning  
NR = Not Reported

Bias <= 20%  
20% < Bias <= 30%  
Bias > 30%

### Flag Text

1 - False Positive  
2 - False Negative  
4 - Sensitivity Evaluation  
5 - Total Metal  
6 - Not Evaluated  
7 - DL > CLP Limit  
9 - Check QL  
10 - Check Isomer  
11 - False Positive Test, Value Not Reported  
14 - Solubility Issue  
15 - Refractory  
16 - Reported zero uncertainty  
17 - NOT DETECTED, reported a statistically zero result.  
18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

FNAL01

Fermi National Accelerator Laboratory (FermiLab)

Sample ID: MAPEP-05-RdV14

PO Box 500, MS325

Radiological Vegetation Standard

Batavia IL 60510

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	NR	0.23				0.16 - 0.30			
Cesium-134	2.08	4.09	N		-49.1	2.86 - 5.32	0.13		Bq/sample
Cesium-137	5.02	5.43	A		-7.6	3.80 - 7.06	0.45		Bq/sample
Cobalt-57	11.7	13.3	A		-12.0	9.31 - 17.29	0.8		Bq/sample
Cobalt-60	4.44	4.43	A		0.2	3.10 - 5.76	0.17		Bq/sample
Manganese-54	6.31	6.57	A		-4.0	4.60 - 8.54	0.57		Bq/sample
Plutonium-238	NR								
Plutonium-239/240	NR	0.164				0.11 - 0.21			
Strontium-90	NR	2.42				1.69 - 3.15			
Uranium-234/233	NR	0.333				0.23 - 0.43			
Uranium-238	NR	0.346				0.24 - 0.45			
Zinc-65	10.4	10.2	A		2.0	7.14 - 13.26	0.9		Bq/sample

### Flags:

A = Result acceptable  
 W = Result acceptable with warning  
 N = Result not acceptable  
 L = Uncertainty potentially too low  
 H = Uncertainty potentially too high  
 Q = Participant should evaluate reported value  
 QL = Quantitation Limit  
 RW = Report Warning  
 NR = Not Reported

Bias <= 20%  
 20% < Bias <= 30%  
 Bias > 30%

### Flag Text

1 - False Positive  
 2 - False Negative  
 4 - Sensitivity Evaluation  
 5 - Total Metal  
 6 - Not Evaluated  
 7 - DL > CLP Limit  
 9 - Check QL  
 10 - Check Isomer  
 11 - False Positive Test, Value Not Reported  
 14 - Solubility Issue  
 15 - Refractory  
 16 - Reported zero uncertainty  
 17 - NOT DETECTED, reported a statistically zero result.  
 18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

GENE01

General Engineering Laboratories, LLC

Sample ID: MAPEP-05-RdV14

2040 Savage Road

Radiological Vegetation Standard

Charleston SC 29407

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	0.187	0.23	A		-18.7	0.16 - 0.30	0.016		Bq/sample
Cesium-134	2.030	4.09	N		-50.4	2.86 - 5.32	0.103		Bq/sample
Cesium-137	2.853	5.43	N		-47.5	3.80 - 7.06	0.118		Bq/sample
Cobalt-57	10.397	13.3	W		-21.8	9.31 - 17.29	0.255	L	Bq/sample
Cobalt-60	3.673	4.43	A		-17.1	3.10 - 5.76	0.118		Bq/sample
Manganese-54	5.243	6.57	W		-20.2	4.60 - 8.54	0.209		Bq/sample
Plutonium-238	0.00425		A				0.00651		Bq/sample
Plutonium-239/240	0.149	0.164	A		-9.1	0.11 - 0.21	0.015		Bq/sample
Strontium-90	2.030	2.42	A		-16.1	1.69 - 3.15	0.068		Bq/sample
Uranium-234/233	0.314	0.333	A		-5.7	0.23 - 0.43	0.021		Bq/sample
Uranium-238	0.302	0.346	A		-12.7	0.24 - 0.45	0.020		Bq/sample
Zinc-65	9.320	10.2	A		-8.6	7.14 - 13.26	0.375		Bq/sample

**Flags:**  
 A = Result acceptable  
 W = Result acceptable with warning  
 N = Result not acceptable  
 L = Uncertainty potentially too low  
 H = Uncertainty potentially too high  
 Q = Participant should evaluate reported value  
 QL = Quantitation Limit  
 RW = Report Warning  
 NR = Not Reported

Bias <= 20%  
 20% < Bias <= 30%  
 Bias > 30%

**Flag Text**  
 1 - False Positive  
 2 - False Negative  
 4 - Sensitivity Evaluation  
 5 - Total Metal  
 6 - Not Evaluated  
 7 - DL > CLP Limit  
 9 - Check QL  
 10 - Check Isomer  
 11 - False Positive Test, Value Not Reported  
 14 - Solubility Issue  
 15 - Refractory  
 16 - Reported zero uncertainty  
 17 - NOT DETECTED, reported a statistically zero result.  
 18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

GPCL01

Georgia Power Company Environmental Laboratory  
5131 Maner Road  
Smyrna GA 30080

Sample ID: MAPEP-05-RdV14

### Radiological Vegetation Standard

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	NR	0.23				0.16 - 0.30			
Cesium-134	3.8	4.09	A		-7.1	2.86 - 5.32	.1	L	Bq/sample
Cesium-137	5.5	5.43	A		1.3	3.80 - 7.06	.2		Bq/sample
Cobalt-57	14.3	13.3	A		7.5	9.31 - 17.29	.3	L	Bq/sample
Cobalt-60	4.4	4.43	A		-0.7	3.10 - 5.76	.2		Bq/sample
Manganese-54	6.9	6.57	A		5.0	4.60 - 8.54	.3		Bq/sample
Plutonium-238	NR								
Plutonium-239/240	NR	0.164				0.11 - 0.21			
Strontium-90	NR	2.42				1.69 - 3.15			
Uranium-234/233	NR	0.333				0.23 - 0.43			
Uranium-238	NR	0.346				0.24 - 0.45			
Zinc-65	11.1	10.2	A		8.8	7.14 - 13.26	.6		Bq/sample

### Flags:

A = Result acceptable  
W = Result acceptable with warning  
N = Result not acceptable  
L = Uncertainty potentially too low  
H = Uncertainty potentially too high  
Q = Participant should evaluate reported value  
QL = Quantitation Limit  
RW = Report Warning  
NR = Not Reported

Bias <= 20%  
20% < Bias <= 30%  
Bias > 30%

### Flag Text

1 - False Positive  
2 - False Negative  
4 - Sensitivity Evaluation  
5 - Total Metal  
6 - Not Evaluated  
7 - DL > CLP Limit  
9 - Check QL  
10 - Check Isomer  
11 - False Positive Test, Value Not Reported  
14 - Solubility Issue  
15 - Refractory  
16 - Reported zero uncertainty  
17 - NOT DETECTED, reported a statistically zero result.  
18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

GPLP01

GPL Laboratories, LLLP

Sample ID: MAPEP-05-RdV14

7210A Corporate Court

Radiological Vegetation Standard

Frederick

MD

21703

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	NR	0.23				0.16 - 0.30			
Cesium-134	4.5	4.09	A		10.0	2.86 - 5.32	0.2		Bq/sample
Cesium-137	6.6	5.43	W		21.5	3.80 - 7.06	0.3		Bq/sample
Cobalt-57	17.9	13.3	N		34.6	9.31 - 17.29	0.5	L	Bq/sample
Cobalt-60	5.4	4.43	W		21.9	3.10 - 5.76	0.2		Bq/sample
Manganese-54	8.3	6.57	W		26.3	4.60 - 8.54	0.4		Bq/sample
Plutonium-238	NR								
Plutonium-239/240	NR	0.164				0.11 - 0.21			
Strontium-90	NR	2.42				1.69 - 3.15			
Uranium-234/233	NR	0.333				0.23 - 0.43			
Uranium-238	NR	0.346				0.24 - 0.45			
Zinc-65	12.5	10.2	W		22.5	7.14 - 13.26	0.7		Bq/sample

### Flags:

A = Result acceptable

W = Result acceptable with warning 20% < Bias <= 30%

N = Result not acceptable

L = Uncertainty potentially too low

H = Uncertainty potentially too high

Q = Participant should evaluate reported value

QL = Quantitation Limit

RW = Report Warning

NR = Not Reported

Bias <= 20%

20% < Bias <= 30%

Bias > 30%

### Flag Text

1 - False Positive

2 - False Negative

4 - Sensitivity Evaluation

5 - Total Metal

6 - Not Evaluated

7 - DL > CLP Limit

9 - Check QL

10 - Check Isomer

11 - False Positive Test, Value Not Reported

14 - Solubility Issue

15 - Refractory

16 - Reported zero uncertainty

17 - NOT DETECTED, reported a statistically zero result.

18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

JAEC99

Radiation Measurements Laboratory

Sample ID: MAPEP-05-RdV14

Jordan Atomic Energy Commission

Radiological Vegetation Standard

Amman

00962 6

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	0.209	0.23	A		-9.1	0.16 - 0.30	0.002	L	Bq/sample
Cesium-134	3.53	4.09	A		-13.7	2.86 - 5.32	0.78	H	Bq/sample
Cesium-137	5.32	5.43	A		-2.0	3.80 - 7.06	1.76	H	Bq/sample
Cobalt-57	12.65	13.3	A		-4.9	9.31 - 17.29	1.76		Bq/sample
Cobalt-60	4.31	4.43	A		-2.7	3.10 - 5.76	1.1	H	Bq/sample
Manganese-54	6.73	6.57	A		2.4	4.60 - 8.54	1.61	H	Bq/sample
Plutonium-238	0.003		N	1			0.00015		Bq/sample
Plutonium-239/240	0.159	0.164	A		-3.0	0.11 - 0.21	0.008		Bq/sample
Strontium-90	2.1	2.42	A		-13.2	1.69 - 3.15	0.12		Bq/sample
Uranium-234/233	0.305	0.333	A		-8.4	0.23 - 0.43	0.01		Bq/sample
Uranium-238	0.311	0.346	A		-10.1	0.24 - 0.45	0.01		Bq/sample
Zinc-65	10.93	10.2	A		7.2	7.14 - 13.26	0.39		Bq/sample

### Flags:

A = Result acceptable  
W = Result acceptable with warning  
N = Result not acceptable  
L = Uncertainty potentially too low  
H = Uncertainty potentially too high  
Q = Participant should evaluate reported value  
QL = Quantitation Limit  
RW = Report Warning  
NR = Not Reported

Bias <= 20%  
20% < Bias <= 30%  
Bias > 30%

### Flag Text

1 - False Positive  
2 - False Negative  
4 - Sensitivity Evaluation  
5 - Total Metal  
6 - Not Evaluated  
7 - DL > CLP Limit  
9 - Check QL  
10 - Check Isomer  
11 - False Positive Test, Value Not Reported  
14 - Solubility Issue  
15 - Refractory  
16 - Reported zero uncertainty  
17 - NOT DETECTED, reported a statistically zero result.  
18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

LAWR01

LAWRENCE BERKELEY NATIONAL LABORATORY

Sample ID: MAPEP-05-RdV14

1 CYCLOTRON RD.

Radiological Vegetation Standard

BERKELEY CA 94720

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	.456	0.23	N		98.3	0.16 - 0.30	.211	H	Bq/sample
Cesium-134	3.71	4.09	A		-9.3	2.86 - 5.32	.09	L	Bq/sample
Cesium-137	5.67	5.43	A		4.4	3.80 - 7.06	.13	L	Bq/sample
Cobalt-57	14.6	13.3	A		9.8	9.31 - 17.29	.34	L	Bq/sample
Cobalt-60	4.65	4.43	A		5.0	3.10 - 5.76	.16		Bq/sample
Manganese-54	7.15	6.57	A		8.8	4.60 - 8.54	.20	L	Bq/sample
Plutonium-238	NR								
Plutonium-239/240	NR	0.164				0.11 - 0.21			
Strontium-90	NR	2.42				1.69 - 3.15			
Uranium-234/233	NR	0.333				0.23 - 0.43			
Uranium-238	NR	0.346				0.24 - 0.45			
Zinc-65	11.5	10.2	A		12.7	7.14 - 13.26	.38		Bq/sample

### Flags:

A = Result acceptable  
 W = Result acceptable with warning  
 N = Result not acceptable  
 L = Uncertainty potentially too low  
 H = Uncertainty potentially too high  
 Q = Participant should evaluate reported value  
 QL = Quantitation Limit  
 RW = Report Warning  
 NR = Not Reported

Bias <= 20%  
 20% < Bias <= 30%  
 Bias > 30%

### Flag Text

1 - False Positive  
 2 - False Negative  
 4 - Sensitivity Evaluation  
 5 - Total Metal  
 6 - Not Evaluated  
 7 - DL > CLP Limit  
 9 - Check QL  
 10 - Check Isomer  
 11 - False Positive Test, Value Not Reported  
 14 - Solubility Issue  
 15 - Refractory  
 16 - Reported zero uncertainty  
 17 - NOT DETECTED, reported a statistically zero result.  
 18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

LAWR02

Lawrence Livermore National Laboratory

Sample ID: MAPEP-05-RdV14

7000 East Avenue

Radiological Vegetation Standard

Livermore CA 94551-

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	0.354	0.23	N		53.9	0.16 - 0.30	.123	H	Bq/sample
Cesium-134	3.49	4.09	A		-14.7	2.86 - 5.32	.13		Bq/sample
Cesium-137	4.90	5.43	A		-9.8	3.80 - 7.06	.19		Bq/sample
Cobalt-57	13.5	13.3	A		1.5	9.31 - 17.29	.42		Bq/sample
Cobalt-60	4.43	4.43	A		0.0	3.10 - 5.76	.16		Bq/sample
Manganese-54	6.59	6.57	A		0.3	4.60 - 8.54	.25		Bq/sample
Plutonium-238	NR								
Plutonium-239/240	NR	0.164				0.11 - 0.21			
Potassium-40	4.9						1.2		Bq/sample
Strontium-90	NR	2.42				1.69 - 3.15			
Uranium-234/233	NR	0.333				0.23 - 0.43			
Uranium-238	NR	0.346				0.24 - 0.45			
Zinc-65	10.6	10.2	A		3.9	7.14 - 13.26	.42		Bq/sample

### Flags:

A = Result acceptable  
W = Result acceptable with warning  
N = Result not acceptable  
L = Uncertainty potentially too low  
H = Uncertainty potentially too high  
Q = Participant should evaluate reported value  
QL = Quantitation Limit  
RW = Report Warning  
NR = Not Reported

Bias <= 20%  
20% < Bias <= 30%  
Bias > 30%

### Flag Text

1 - False Positive  
2 - False Negative  
4 - Sensitivity Evaluation  
5 - Total Metal  
6 - Not Evaluated  
7 - DL > CLP Limit  
9 - Check QL  
10 - Check Isomer  
11 - False Positive Test, Value Not Reported  
14 - Solubility Issue  
15 - Refractory  
16 - Reported zero uncertainty  
17 - NOT DETECTED, reported a statistically zero result.  
18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

LOCK03

RADIATION MEASUREMENTS LABORATORY/AEDL

Sample ID: MAPEP-05-RdV14

INEEL

Radiological Vegetation Standard

Idaho Falls

ID

83415-7111

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	.204	0.23	A		-11.3	0.16 - 0.30	0.016		Bq/sample
Cesium-134	3.7	4.09	A		-9.5	2.86 - 5.32	0.3		Bq/sample
Cesium-137	5.1	5.43	A		-6.1	3.80 - 7.06	0.4		Bq/sample
Cobalt-57	13.3	13.3	A		0.0	9.31 - 17.29	0.9		Bq/sample
Cobalt-60	4.2	4.43	A		-5.2	3.10 - 5.76	0.3		Bq/sample
Manganese-54	6.1	6.57	A		-7.2	4.60 - 8.54	0.5		Bq/sample
Plutonium-238	0.0004		A				0.0006		Bq/sample
Plutonium-239/240	0.167	0.164	A		1.8	0.11 - 0.21	0.009		Bq/sample
Strontium-90	NR	2.42				1.69 - 3.15			
Uranium-234/233	0.335	0.333	A		0.6	0.23 - 0.43	0.015		Bq/sample
Uranium-238	0.355	0.346	A		2.6	0.24 - 0.45	0.016		Bq/sample
Zinc-65	10.2	10.2	A		0.0	7.14 - 13.26	0.9		Bq/sample

### Flags:

A = Result acceptable  
W = Result acceptable with warning  
N = Result not acceptable  
L = Uncertainty potentially too low  
H = Uncertainty potentially too high  
Q = Participant should evaluate reported value  
QL = Quantitation Limit  
RW = Report Warning  
NR = Not Reported

Bias <= 20%  
20% < Bias <= 30%  
Bias > 30%

### Flag Text

1 - False Positive  
2 - False Negative  
4 - Sensitivity Evaluation  
5 - Total Metal  
6 - Not Evaluated  
7 - DL > CLP Limit  
9 - Check QL  
10 - Check Isomer  
11 - False Positive Test, Value Not Reported  
14 - Solubility Issue  
15 - Refractory  
16 - Reported zero uncertainty  
17 - NOT DETECTED, reported a statistically zero result.  
18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

MART01

USEC, Inc.

Sample ID: MAPEP-05-RdV14

Lab COC, Bldg. X-710, Rm 222

Radiological Vegetation Standard

Piketon

OH

45661-

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	0.212	0.23	A		-7.8	0.16 - 0.30	0.019		Bq/sample
Cesium-134	4.2	4.09	A		2.7	2.86 - 5.32	0.4		Bq/sample
Cesium-137	6.3	5.43	A		16.0	3.80 - 7.06	0.6		Bq/sample
Cobalt-57	16.6	13.3	W		24.8	9.31 - 17.29	0.8		Bq/sample
Cobalt-60	5.1	4.43	A		15.1	3.10 - 5.76	0.5		Bq/sample
Manganese-54	7.6	6.57	A		15.7	4.60 - 8.54	0.6		Bq/sample
Plutonium-238	0.005		A				0.002		Bq/sample
Plutonium-239/240	0.136	0.164	A		-17.1	0.11 - 0.21	0.018		Bq/sample
Strontium-90	NR	2.42				1.69 - 3.15			
Uranium-234/233	0.293	0.333	A		-12.0	0.23 - 0.43	0.027		Bq/sample
Uranium-238	0.297	0.346	A		-14.2	0.24 - 0.45	0.028		Bq/sample
Zinc-65	12.1	10.2	A		18.6	7.14 - 13.26	1.2		Bq/sample

### Flags:

A = Result acceptable

W = Result acceptable with warning 20% < Bias <= 30%

N = Result not acceptable

L = Uncertainty potentially too low

H = Uncertainty potentially too high

Q = Participant should evaluate reported value

QL = Quantitation Limit

RW = Report Warning

NR = Not Reported

Bias <= 20%

20% < Bias <= 30%

Bias > 30%

### Flag Text

1 - False Positive

2 - False Negative

4 - Sensitivity Evaluation

5 - Total Metal

6 - Not Evaluated

7 - DL > CLP Limit

9 - Check QL

10 - Check Isomer

11 - False Positive Test, Value Not Reported

14 - Solubility Issue

15 - Refractory

16 - Reported zero uncertainty

17 - NOT DETECTED, reported a statistically zero result.

18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

MART02

United States Enrichment Corporation

Sample ID: MAPEP-05-RdV14

5600 Hobbs Road

Radiological Vegetation Standard

Paducah KY 42001-

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	NR	0.23				0.16 - 0.30			
Cesium-134	3.613	4.09	A		-11.7	2.86 - 5.32	0.3955		Bq/sample
Cesium-137	4.632	5.43	A		-14.7	3.80 - 7.06	0.5383		Bq/sample
Cobalt-57	11.9	13.3	A		-10.5	9.31 - 17.29	1.235		Bq/sample
Cobalt-60	4.069	4.43	A		-8.1	3.10 - 5.76	0.4565		Bq/sample
Manganese-54	5.912	6.57	A		-10.0	4.60 - 8.54	0.6953		Bq/sample
Plutonium-238	NR								
Plutonium-239/240	NR	0.164				0.11 - 0.21			
Strontium-90	2.86	2.42	A		18.2	1.69 - 3.15	0.127		Bq/sample
Uranium-234/233	NR	0.333				0.23 - 0.43			
Uranium-238	NR	0.346				0.24 - 0.45			
Zinc-65	9.498	10.2	A		-6.9	7.14 - 13.26	1.227		Bq/sample

### Flags:

A = Result acceptable  
 W = Result acceptable with warning  
 N = Result not acceptable  
 L = Uncertainty potentially too low  
 H = Uncertainty potentially too high  
 Q = Participant should evaluate reported value  
 QL = Quantitation Limit  
 RW = Report Warning  
 NR = Not Reported

Bias <= 20%  
 20% < Bias <= 30%  
 Bias > 30%

### Flag Text

1 - False Positive  
 2 - False Negative  
 4 - Sensitivity Evaluation  
 5 - Total Metal  
 6 - Not Evaluated  
 7 - DL > CLP Limit  
 9 - Check QL  
 10 - Check Isomer  
 11 - False Positive Test, Value Not Reported  
 14 - Solubility Issue  
 15 - Refractory  
 16 - Reported zero uncertainty  
 17 - NOT DETECTED, reported a statistically zero result.  
 18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

MART03

Radioactive Material Analysis Laboratory

Sample ID: MAPEP-05-RdV14

ORNL

Radiological Vegetation Standard

Oak Ridge

TN

37831-6043

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	0.21	0.23	A		-8.7	0.16 - 0.30	0.02		Bq/sample
Cesium-134	4.98	4.09	W		21.8	2.86 - 5.32	0.50		Bq/sample
Cesium-137	7.63	5.43	N		40.5	3.80 - 7.06	0.76		Bq/sample
Cobalt-57	23.3	13.3	N		75.2	9.31 - 17.29	0.23	L	Bq/sample
Cobalt-60	6.08	4.43	N		37.2	3.10 - 5.76	0.61		Bq/sample
Manganese-54	9.42	6.57	N		43.4	4.60 - 8.54	0.94		Bq/sample
Plutonium-238	0.0038		N	1			0.0004		Bq/sample
Plutonium-239/240	0.14	0.164	A		-14.6	0.11 - 0.21	0.01		Bq/sample
Strontium-90	2.18	2.42	A		-9.9	1.69 - 3.15	0.22		Bq/sample
Uranium-234/233	0.33	0.333	A		-0.9	0.23 - 0.43	0.03		Bq/sample
Uranium-238	0.33	0.346	A		-4.6	0.24 - 0.45	0.03		Bq/sample
Zinc-65	15.26	10.2	N		49.6	7.14 - 13.26	1.5		Bq/sample

### Flags:

A = Result acceptable  
 W = Result acceptable with warning  
 N = Result not acceptable  
 L = Uncertainty potentially too low  
 H = Uncertainty potentially too high  
 Q = Participant should evaluate reported value  
 QL = Quantitation Limit  
 RW = Report Warning  
 NR = Not Reported

Bias <= 20%  
 20% < Bias <= 30%  
 Bias > 30%

### Flag Text

1 - False Positive  
 2 - False Negative  
 4 - Sensitivity Evaluation  
 5 - Total Metal  
 6 - Not Evaluated  
 7 - DL > CLP Limit  
 9 - Check QL  
 10 - Check Isomer  
 11 - False Positive Test, Value Not Reported  
 14 - Solubility Issue  
 15 - Refractory  
 16 - Reported zero uncertainty  
 17 - NOT DETECTED, reported a statistically zero result.  
 18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

MDPH01

MDPH-Radiation Control Program

Sample ID: MAPEP-05-RdV14

MERL-Room 002

### Radiological Vegetation Standard

Jamaica Plain

MA

02130-3597

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	0.27	0.23	A		17.4	0.16 - 0.30	0.06	H	Bq/sample
Cesium-134	3.65	4.09	A		-10.8	2.86 - 5.32	0.08	L	Bq/sample
Cesium-137	5.14	5.43	A		-5.3	3.80 - 7.06	0.16		Bq/sample
Cobalt-57	14.1	13.3	A		6.0	9.31 - 17.29	0.27	L	Bq/sample
Cobalt-60	4.32	4.43	A		-2.5	3.10 - 5.76	0.08	L	Bq/sample
Manganese-54	6.41	6.57	A		-2.4	4.60 - 8.54	0.24		Bq/sample
Plutonium-238	NR								
Plutonium-239/240	NR	0.164				0.11 - 0.21			
Strontium-90	NR	2.42				1.69 - 3.15			
Uranium-234/233	NR	0.333				0.23 - 0.43			
Uranium-238	NR	0.346				0.24 - 0.45			
Zinc-65	10.99	10.2	A		7.7	7.14 - 13.26	0.38		Bq/sample

### Flags:

A = Result acceptable  
 W = Result acceptable with warning  
 N = Result not acceptable  
 L = Uncertainty potentially too low  
 H = Uncertainty potentially too high  
 Q = Participant should evaluate reported value  
 QL = Quantitation Limit  
 RW = Report Warning  
 NR = Not Reported

Bias <= 20%  
 20% < Bias <= 30%  
 Bias > 30%

### Flag Text

1 - False Positive  
 2 - False Negative  
 4 - Sensitivity Evaluation  
 5 - Total Metal  
 6 - Not Evaluated  
 7 - DL > CLP Limit  
 9 - Check QL  
 10 - Check Isomer  
 11 - False Positive Test, Value Not Reported  
 14 - Solubility Issue  
 15 - Refractory  
 16 - Reported zero uncertainty  
 17 - NOT DETECTED, reported a statistically zero result.  
 18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

NARL01

National Air and Radiation Environmental Laboratory  
540 S. Morris Ave.  
Montgomery AL 36115-2601

Sample ID: MAPEP-05-RdV14

### Radiological Vegetation Standard

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	0.202	0.23	A		-12.2	0.16 - 0.30	0.020		Bq/sample
Cesium-134	4.31	4.09	A		5.4	2.86 - 5.32	0.16		Bq/sample
Cesium-137	6.46	5.43	A		19.0	3.80 - 7.06	0.23		Bq/sample
Cobalt-57	17.67	13.3	N		32.9	9.31 - 17.29	0.53	L	Bq/sample
Cobalt-60	4.98	4.43	A		12.4	3.10 - 5.76	0.17		Bq/sample
Manganese-54	7.88	6.57	A		19.9	4.60 - 8.54	0.28		Bq/sample
Plutonium-238	NR		N	11					
Plutonium-239/240	0.154	0.164	A		-6.1	0.11 - 0.21	0.013		Bq/sample
Strontium-90	NR	2.42				1.69 - 3.15			
Uranium-234/233	0.351	0.333	A		5.4	0.23 - 0.43	0.026		Bq/sample
Uranium-238	0.344	0.346	A		-0.6	0.24 - 0.45	0.025		Bq/sample
Zinc-65	12.27	10.2	W		20.3	7.14 - 13.26	0.47		Bq/sample

### Flags:

A = Result acceptable  
W = Result acceptable with warning  
N = Result not acceptable  
L = Uncertainty potentially too low  
H = Uncertainty potentially too high  
Q = Participant should evaluate reported value  
QL = Quantitation Limit  
RW = Report Warning  
NR = Not Reported

Bias <= 20%  
20% < Bias <= 30%  
Bias > 30%

### Flag Text

1 - False Positive  
2 - False Negative  
4 - Sensitivity Evaluation  
5 - Total Metal  
6 - Not Evaluated  
7 - DL > CLP Limit  
9 - Check QL  
10 - Check Isomer  
11 - False Positive Test, Value Not Reported  
14 - Solubility Issue  
15 - Refractory  
16 - Reported zero uncertainty  
17 - NOT DETECTED, reported a statistically zero result.  
18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

NES101

BWXT Services-Nuclear Environmental Laboratory Servi  
Lynchburg Technology Center  
Lynchburg VA 24504-5447

Sample ID: MAPEP-05-RdV14

### Radiological Vegetation Standard

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	0.294	0.23	W		27.8	0.16 - 0.30	0.025		Bq/sample
Cesium-134	2.90	4.09	W		-29.1	2.86 - 5.32	0.26		Bq/sample
Cesium-137	4.40	5.43	A		-19.0	3.80 - 7.06	0.25		Bq/sample
Cobalt-57	11.9	13.3	A		-10.5	9.31 - 17.29	0.29	L	Bq/sample
Cobalt-60	4.77	4.43	A		7.7	3.10 - 5.76	0.34		Bq/sample
Manganese-54	5.48	6.57	A		-16.6	4.60 - 8.54	0.39		Bq/sample
Plutonium-238	0.0099		A				0.0076		Bq/sample
Plutonium-239/240	0.134	0.164	A		-18.3	0.11 - 0.21	0.016		Bq/sample
Strontium-90	2.11	2.42	A		-12.8	1.69 - 3.15	0.162		Bq/sample
Uranium-234/233	0.317	0.333	A		-4.8	0.23 - 0.43	0.027		Bq/sample
Uranium-238	0.324	0.346	A		-6.4	0.24 - 0.45	0.028		Bq/sample
Zinc-65	5.51	10.2	N		-46.0	7.14 - 13.26	0.53		Bq/sample

#### Flags:

A = Result acceptable  
W = Result acceptable with warning  
N = Result not acceptable  
L = Uncertainty potentially too low  
H = Uncertainty potentially too high  
Q = Participant should evaluate reported value  
QL = Quantitation Limit  
RW = Report Warning  
NR = Not Reported

Bias <= 20%  
20% < Bias <= 30%  
Bias > 30%

#### Flag Text

1 - False Positive  
2 - False Negative  
4 - Sensitivity Evaluation  
5 - Total Metal  
6 - Not Evaluated  
7 - DL > CLP Limit  
9 - Check QL  
10 - Check Isomer  
11 - False Positive Test, Value Not Reported  
14 - Solubility Issue  
15 - Refractory  
16 - Reported zero uncertainty  
17 - NOT DETECTED, reported a statistically zero result.  
18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

NJDH01

New Jersey Dept. of Health & Senior Services, PHEL, E  
Market and Warren Streets  
Trenton NJ 08625-0361

Sample ID: MAPEP-05-RdV14

### Radiological Vegetation Standard

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	0.284	0.23	W		23.5	0.16 - 0.30	0.111	H	Bq/sample
Cesium-134	4.04	4.09	A		-1.2	2.86 - 5.32	0.11	L	Bq/sample
Cesium-137	5.62	5.43	A		3.5	3.80 - 7.06	0.22		Bq/sample
Cobalt-57	16.0	13.3	W		20.3	9.31 - 17.29	0.4	L	Bq/sample
Cobalt-60	4.68	4.43	A		5.6	3.10 - 5.76	0.12	L	Bq/sample
Manganese-54	7.06	6.57	A		7.5	4.60 - 8.54	0.26		Bq/sample
Plutonium-238	NR								
Plutonium-239/240	NR	0.164				0.11 - 0.21			
Strontium-90	NR	2.42				1.69 - 3.15			
Uranium-234/233	NR	0.333				0.23 - 0.43			
Uranium-238	NR	0.346				0.24 - 0.45			
Zinc-65	11.4	10.2	A		11.8	7.14 - 13.26	0.4		Bq/sample

### Flags:

A = Result acceptable  
W = Result acceptable with warning  
N = Result not acceptable  
L = Uncertainty potentially too low  
H = Uncertainty potentially too high  
Q = Participant should evaluate reported value  
QL = Quantitation Limit  
RW = Report Warning  
NR = Not Reported

Bias <= 20%  
20% < Bias <= 30%  
Bias > 30%

### Flag Text

1 - False Positive  
2 - False Negative  
4 - Sensitivity Evaluation  
5 - Total Metal  
6 - Not Evaluated  
7 - DL > CLP Limit  
9 - Check QL  
10 - Check Isomer  
11 - False Positive Test, Value Not Reported  
14 - Solubility Issue  
15 - Refractory  
16 - Reported zero uncertainty  
17 - NOT DETECTED, reported a statistically zero result.  
18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

*NRLL99*

National Radiation Laboratory

108 Victoria St

Christchurch

Christchu 8001

**Sample ID:** MAPEP-05-RdV14

**Radiological Vegetation Standard**

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	0.227	0.23	A		-1.3	0.16 - 0.30	0.016		Bq/sample
Cesium-134	4.39	4.09	A		7.3	2.86 - 5.32	0.11	L	Bq/sample
Cesium-137	5.71	5.43	A		5.2	3.80 - 7.06	0.13	L	Bq/sample
Cobalt-57	14.27	13.3	A		7.3	9.31 - 17.29	0.73		Bq/sample
Cobalt-60	4.95	4.43	A		11.7	3.10 - 5.76	0.1	L	Bq/sample
Manganese-54	6.91	6.57	A		5.2	4.60 - 8.54	0.14	L	Bq/sample
Plutonium-238	NR								
Plutonium-239/240	NR	0.164				0.11 - 0.21			
Strontium-90	NR	2.42				1.69 - 3.15			
Uranium-234/233	NR	0.333				0.23 - 0.43			
Uranium-238	NR	0.346				0.24 - 0.45			
Zinc-65	11.24	10.2	A		10.2	7.14 - 13.26	0.24	L	Bq/sample

### Flags:

A = Result acceptable  
 W = Result acceptable with warning  
 N = Result not acceptable  
 L = Uncertainty potentially too low  
 H = Uncertainty potentially too high  
 Q = Participant should evaluate reported value  
 QL = Quantitation Limit  
 RW = Report Warning  
 NR = Not Reported

Bias <= 20%  
 20% < Bias <= 30%  
 Bias > 30%

### Flag Text

1 - False Positive  
 2 - False Negative  
 4 - Sensitivity Evaluation  
 5 - Total Metal  
 6 - Not Evaluated  
 7 - DL > CLP Limit  
 9 - Check QL  
 10 - Check Isomer  
 11 - False Positive Test, Value Not Reported  
 14 - Solubility Issue  
 15 - Refractory  
 16 - Reported zero uncertainty  
 17 - NOT DETECTED, reported a statistically zero result.  
 18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

NTSIO1

Nuclear Technology Services, Inc.

Sample ID: MAPEP-05-RdV14

635 Hembree Parkway

Radiological Vegetation Standard

Roswell

GA

30076

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	0.237	0.23	A		3.0	0.16 - 0.30	0.008		Bq/sample
Cesium-134	3.530	4.09	A		-13.7	2.86 - 5.32	0.610		Bq/sample
Cesium-137	5.330	5.43	A		-1.8	3.80 - 7.06	0.900		Bq/sample
Cobalt-57	12.980	13.3	A		-2.4	9.31 - 17.29	1.820		Bq/sample
Cobalt-60	4.670	4.43	A		5.4	3.10 - 5.76	0.840		Bq/sample
Manganese-54	6.940	6.57	A		5.6	4.60 - 8.54	1.410	H	Bq/sample
Plutonium-238	0.004		A				0.002		Bq/sample
Plutonium-239/240	0.144	0.164	A		-12.2	0.11 - 0.21	0.006		Bq/sample
Potassium-40	37.900						7.200		Bq/sample
Strontium-90	1.580	2.42	N		-34.7	1.69 - 3.15	0.250		Bq/sample
Uranium-234/233	0.268	0.333	A		-19.5	0.23 - 0.43	0.009		Bq/sample
Uranium-235	0.015						0.002		Bq/sample
Uranium-238	0.274	0.346	W		-20.8	0.24 - 0.45	0.009		Bq/sample
Zinc-65	10.340	10.2	A		1.4	7.14 - 13.26	1.930		Bq/sample

### Flags:

A = Result acceptable  
 W = Result acceptable with warning  
 N = Result not acceptable  
 L = Uncertainty potentially too low  
 H = Uncertainty potentially too high  
 Q = Participant should evaluate reported value  
 QL = Quantitation Limit  
 RW = Report Warning  
 NR = Not Reported

Bias <= 20%  
 20% < Bias <= 30%  
 Bias > 30%

### Flag Text

1 - False Positive  
 2 - False Negative  
 4 - Sensitivity Evaluation  
 5 - Total Metal  
 6 - Not Evaluated  
 7 - DL > CLP Limit  
 9 - Check QL  
 10 - Check Isomer  
 11 - False Positive Test, Value Not Reported  
 14 - Solubility Issue  
 15 - Refractory  
 16 - Reported zero uncertainty  
 17 - NOT DETECTED, reported a statistically zero result.  
 18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

ODH101

Ohio Department of Health Laboratory

Sample ID: MAPEP-05-RdV14

1571 Perry St

Radiological Vegetation Standard

Columbus

OH

43201

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	NR	0.23				0.16 - 0.30			
Cesium-134	4.07	4.09	A		-0.5	2.86 - 5.32	0.13		Bq/sample
Cesium-137	5.81	5.43	A		7.0	3.80 - 7.06	0.15	L	Bq/sample
Cobalt-57	13.17	13.3	A		-1.0	9.31 - 17.29	0.14	L	Bq/sample
Cobalt-60	4.3	4.43	A		-2.9	3.10 - 5.76	0.14		Bq/sample
Manganese-54	6.43	6.57	A		-2.1	4.60 - 8.54	0.18	L	Bq/sample
Plutonium-238	NR								
Plutonium-239/240	NR	0.164				0.11 - 0.21			
Strontium-90	NR	2.42				1.69 - 3.15			
Uranium-234/233	NR	0.333				0.23 - 0.43			
Uranium-238	NR	0.346				0.24 - 0.45			
Zinc-65	10.3	10.2	A		1.0	7.14 - 13.26	0.38		Bq/sample

### Flags:

A = Result acceptable  
 W = Result acceptable with warning  
 N = Result not acceptable  
 L = Uncertainty potentially too low  
 H = Uncertainty potentially too high  
 Q = Participant should evaluate reported value  
 QL = Quantitation Limit  
 RW = Report Warning  
 NR = Not Reported

Bias <= 20%  
 20% < Bias <= 30%  
 Bias > 30%

### Flag Text

1 - False Positive  
 2 - False Negative  
 4 - Sensitivity Evaluation  
 5 - Total Metal  
 6 - Not Evaluated  
 7 - DL > CLP Limit  
 9 - Check QL  
 10 - Check Isomer  
 11 - False Positive Test, Value Not Reported  
 14 - Solubility Issue  
 15 - Refractory  
 16 - Reported zero uncertainty  
 17 - NOT DETECTED, reported a statistically zero result.  
 18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

ORIS01

ORISE/ESSAP

Sample ID: MAPEP-05-RdV14

PO Box 117

Radiological Vegetation Standard

Oak Ridge

TN

37831-0117

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	0.22	0.23	A		-4.3	0.16 - 0.30	0.01		Bq/sample
Cesium-134	5.06	4.09	W		23.7	2.86 - 5.32	0.15	L	Bq/sample
Cesium-137	6.55	5.43	W		20.6	3.80 - 7.06	0.16	L	Bq/sample
Cobalt-57	17.78	13.3	N		33.7	9.31 - 17.29	0.31	L	Bq/sample
Cobalt-60	5.30	4.43	A		19.6	3.10 - 5.76	0.15	L	Bq/sample
Manganese-54	7.48	6.57	A		13.9	4.60 - 8.54	0.17	L	Bq/sample
Plutonium-238	0.0004		A				0.0004		Bq/sample
Plutonium-239/240	0.16	0.164	A		-2.4	0.11 - 0.21	0.01		Bq/sample
Strontium-90	2.42	2.42	A		0.0	1.69 - 3.15	0.04	L	Bq/sample
Uranium-234/233	0.34	0.333	A		2.1	0.23 - 0.43	0.01	L	Bq/sample
Uranium-238	0.35	0.346	A		1.2	0.24 - 0.45	0.01	L	Bq/sample
Zinc-65	12.05	10.2	A		18.1	7.14 - 13.26	0.30	L	Bq/sample

### Flags:

A = Result acceptable  
 W = Result acceptable with warning  
 N = Result not acceptable  
 L = Uncertainty potentially too low  
 H = Uncertainty potentially too high  
 Q = Participant should evaluate reported value  
 QL = Quantitation Limit  
 RW = Report Warning  
 NR = Not Reported

Bias <= 20%  
 20% < Bias <= 30%  
 Bias > 30%

### Flag Text

1 - False Positive  
 2 - False Negative  
 4 - Sensitivity Evaluation  
 5 - Total Metal  
 6 - Not Evaluated  
 7 - DL > CLP Limit  
 9 - Check QL  
 10 - Check Isomer  
 11 - False Positive Test, Value Not Reported  
 14 - Solubility Issue  
 15 - Refractory  
 16 - Reported zero uncertainty  
 17 - NOT DETECTED, reported a statistically zero result.  
 18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

PBRF01

NASA Plum Brook Reactor Facility Lab

Sample ID: MAPEP-05-RdV14

6100 Columbus Ave

Radiological Vegetation Standard

Sandusky OH 44870

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	NR	0.23				0.16 - 0.30			
Cesium-134	NR	4.09				2.86 - 5.32			
Cesium-137	5.7494	5.43	A		5.9	3.80 - 7.06	0.513		Bq/sample
Cobalt-57	NR	13.3				9.31 - 17.29			
Cobalt-60	5.4716	4.43	W		23.5	3.10 - 5.76	0.342		Bq/sample
Manganese-54	NR	6.57				4.60 - 8.54			
Plutonium-238	NR								
Plutonium-239/240	NR	0.164				0.11 - 0.21			
Strontium-90	NR	2.42				1.69 - 3.15			
Uranium-234/233	NR	0.333				0.23 - 0.43			
Uranium-238	NR	0.346				0.24 - 0.45			
Zinc-65	NR	10.2				7.14 - 13.26			

### Flags:

A = Result acceptable  
 W = Result acceptable with warning  
 N = Result not acceptable  
 L = Uncertainty potentially too low  
 H = Uncertainty potentially too high  
 Q = Participant should evaluate reported value  
 QL = Quantitation Limit  
 RW = Report Warning  
 NR = Not Reported

Bias <= 20%  
 20% < Bias <= 30%  
 Bias > 30%

### Flag Text

1 - False Positive  
 2 - False Negative  
 4 - Sensitivity Evaluation  
 5 - Total Metal  
 6 - Not Evaluated  
 7 - DL > CLP Limit  
 9 - Check QL  
 10 - Check Isomer  
 11 - False Positive Test, Value Not Reported  
 14 - Solubility Issue  
 15 - Refractory  
 16 - Reported zero uncertainty  
 17 - NOT DETECTED, reported a statistically zero result.  
 18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

QUAN01

STL St. Louis

Sample ID: MAPEP-05-RdV14

13715 Rider Trail North

Radiological Vegetation Standard

Earth City

MO

63045-

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	0.152	0.23	N		-33.9	0.16 - 0.30	0.009		Bq/sample
Cesium-134	4.13	4.09	A		1.0	2.86 - 5.32	0.15		Bq/sample
Cesium-137	5.78	5.43	A		6.4	3.80 - 7.06	0.20		Bq/sample
Cobalt-57	15.2	13.3	A		14.3	9.31 - 17.29	0.4	L	Bq/sample
Cobalt-60	4.66	4.43	A		5.2	3.10 - 5.76	0.15		Bq/sample
Manganese-54	6.96	6.57	A		5.9	4.60 - 8.54	0.24		Bq/sample
Plutonium-238	0.0006		A				0.0008		Bq/sample
Plutonium-239/240	0.125	0.164	W		-23.8	0.11 - 0.21	0.001	L	Bq/sample
Strontium-90	0.945	2.42	N		-61.0	1.69 - 3.15	0.052		Bq/sample
Uranium-234/233	0.297	0.333	A		-10.8	0.23 - 0.43	0.016		Bq/sample
Uranium-238	0.299	0.346	A		-13.6	0.24 - 0.45	0.016		Bq/sample
Zinc-65	11.3	10.2	A		10.8	7.14 - 13.26	0.4		Bq/sample

### Flags:

A = Result acceptable

W = Result acceptable with warning 20% < Bias <= 30%

N = Result not acceptable

L = Uncertainty potentially too low

H = Uncertainty potentially too high

Q = Participant should evaluate reported value

QL = Quantitation Limit

RW = Report Warning

NR = Not Reported

Bias <= 20%

20% < Bias <= 30%

Bias > 30%

### Flag Text

1 - False Positive

2 - False Negative

4 - Sensitivity Evaluation

5 - Total Metal

6 - Not Evaluated

7 - DL > CLP Limit

9 - Check QL

10 - Check Isomer

11 - False Positive Test, Value Not Reported

14 - Solubility Issue

15 - Refractory

16 - Reported zero uncertainty

17 - NOT DETECTED, reported a statistically zero result.

18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

QUAN03

SEVERN TRENT LABORATORIES RICHLAND  
2800 GEORGE WASHINGTON WAY  
RICHLAND WA 99354-

Sample ID: MAPEP-05-RdV14

Radiological Vegetation Standard

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	0.414	0.23	N		80.0	0.16 - 0.30	0.0672		Bq/sample
Cesium-134	3.64	4.09	A		-11.0	2.86 - 5.32	0.254		Bq/sample
Cesium-137	5.45	5.43	A		0.4	3.80 - 7.06	0.335		Bq/sample
Cobalt-57	14.06	13.3	A		5.7	9.31 - 17.29	0.892		Bq/sample
Cobalt-60	4.25	4.43	A		-4.1	3.10 - 5.76	0.301		Bq/sample
Manganese-54	6.13	6.57	A		-6.7	4.60 - 8.54	0.420		Bq/sample
Plutonium-238	2.26		N	1			0.188		Bq/sample
Plutonium-239/240	0.0922	0.164	N		-43.8	0.11 - 0.21	0.0167		Bq/sample
Strontium-90	5.20	2.42	N		114.9	1.69 - 3.15	0.463		Bq/sample
Uranium-234/233	0.515	0.333	N		54.7	0.23 - 0.43	0.0583		Bq/sample
Uranium-238	0.609	0.346	N		76.0	0.24 - 0.45	0.0666		Bq/sample
Zinc-65	9.62	10.2	A		-5.7	7.14 - 13.26	0.636		Bq/sample

### Flags:

A = Result acceptable  
W = Result acceptable with warning  
N = Result not acceptable  
L = Uncertainty potentially too low  
H = Uncertainty potentially too high  
Q = Participant should evaluate reported value  
QL = Quantitation Limit  
RW = Report Warning  
NR = Not Reported

Bias <= 20%  
20% < Bias <= 30%  
Bias > 30%

### Flag Text

1 - False Positive  
2 - False Negative  
4 - Sensitivity Evaluation  
5 - Total Metal  
6 - Not Evaluated  
7 - DL > CLP Limit  
9 - Check QL  
10 - Check Isomer  
11 - False Positive Test, Value Not Reported  
14 - Solubility Issue  
15 - Refractory  
16 - Reported zero uncertainty  
17 - NOT DETECTED, reported a statistically zero result.  
18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

RMCL99

Royal Scientific Society - Radiation Measurements Lab

Sample ID: MAPEP-05-RdV14

Ahmad Al-Tarawneh Str.

Radiological Vegetation Standard

Al-Jubaiha Amman 11941

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	NR	0.23				0.16 - 0.30			
Cesium-134	4.64	4.09	A		13.4	2.86 - 5.32	0.18		Bq/sample
Cesium-137	5.80	5.43	A		6.8	3.80 - 7.06	0.17	L	Bq/sample
Cobalt-57	15.25	13.3	A		14.7	9.31 - 17.29	0.44	L	Bq/sample
Cobalt-60	4.81	4.43	A		8.6	3.10 - 5.76	0.24		Bq/sample
Manganese-54	6.97	6.57	A		6.1	4.60 - 8.54	0.21		Bq/sample
Plutonium-238	NR								
Plutonium-239/240	NR	0.164				0.11 - 0.21			
Potassium-40	43.67						1.83		Bq/sample
Strontium-90	NR	2.42				1.69 - 3.15			
Uranium-234/233	NR	0.333				0.23 - 0.43			
Uranium-238	NR	0.346				0.24 - 0.45			
Zinc-65	11.44	10.2	A		12.2	7.14 - 13.26	0.39		Bq/sample

### Flags:

A = Result acceptable  
W = Result acceptable with warning  
N = Result not acceptable  
L = Uncertainty potentially too low  
H = Uncertainty potentially too high  
Q = Participant should evaluate reported value  
QL = Quantitation Limit  
RW = Report Warning  
NR = Not Reported

Bias <= 20%  
20% < Bias <= 30%  
Bias > 30%

### Flag Text

1 - False Positive  
2 - False Negative  
4 - Sensitivity Evaluation  
5 - Total Metal  
6 - Not Evaluated  
7 - DL > CLP Limit  
9 - Check QL  
10 - Check Isomer  
11 - False Positive Test, Value Not Reported  
14 - Solubility Issue  
15 - Refractory  
16 - Reported zero uncertainty  
17 - NOT DETECTED, reported a statistically zero result.  
18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

RPSC01

Radiation Protection Service

Sample ID: MAPEP-05-RdV14

Ontario Ministry of Labour

Radiological Vegetation Standard

Weston

Ontario

M9P 3T1

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	NR	0.23				0.16 - 0.30			
Cesium-134	4.4	4.09	A		7.6	2.86 - 5.32	0.4		Bq/sample
Cesium-137	5.5	5.43	A		1.3	3.80 - 7.06	0.5		Bq/sample
Cobalt-57	14.7	13.3	A		10.5	9.31 - 17.29	1.2		Bq/sample
Cobalt-60	4.7	4.43	A		6.1	3.10 - 5.76	0.4		Bq/sample
Manganese-54	6.8	6.57	A		3.5	4.60 - 8.54	0.6		Bq/sample
Plutonium-238	NR								
Plutonium-239/240	NR	0.164				0.11 - 0.21			
Strontium-90	NR	2.42				1.69 - 3.15			
Uranium-234/233	NR	0.333				0.23 - 0.43			
Uranium-238	NR	0.346				0.24 - 0.45			
Zinc-65	11.0	10.2	A		7.8	7.14 - 13.26	0.9		Bq/sample

### Flags:

A = Result acceptable

W = Result acceptable with warning

N = Result not acceptable

L = Uncertainty potentially too low

H = Uncertainty potentially too high

Q = Participant should evaluate reported value

QL = Quantitation Limit

RW = Report Warning

NR = Not Reported

Bias <= 20%

20% < Bias <= 30%

Bias > 30%

### Flag Text

1 - False Positive

2 - False Negative

4 - Sensitivity Evaluation

5 - Total Metal

6 - Not Evaluated

7 - DL > CLP Limit

9 - Check QL

10 - Check Isomer

11 - False Positive Test, Value Not Reported

14 - Solubility Issue

15 - Refractory

16 - Reported zero uncertainty

17 - NOT DETECTED, reported a statistically zero result.

18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

RSIR99

Instituto de Radioprotecao e Dosimetria

Sample ID: MAPEP-05-RdV14

Avenida Salvador Allende S/no.

Radiological Vegetation Standard

RJ

Rio de Ja 22780-160

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	NR	0.23				0.16 - 0.30			
Cesium-134	3.767	4.09	A		-7.9	2.86 - 5.32	0.200		Bq/sample
Cesium-137	5.367	5.43	A		-1.2	3.80 - 7.06	0.300		Bq/sample
Cobalt-57	14.733	13.3	A		10.8	9.31 - 17.29	0.567		Bq/sample
Cobalt-60	4.200	4.43	A		-5.2	3.10 - 5.76	0.200		Bq/sample
Manganese-54	6.500	6.57	A		-1.1	4.60 - 8.54	0.367		Bq/sample
Plutonium-238	NR								
Plutonium-239/240	NR	0.164				0.11 - 0.21			
Strontium-90	NR	2.42				1.69 - 3.15			
Uranium-234/233	NR	0.333				0.23 - 0.43			
Uranium-238	NR	0.346				0.24 - 0.45			
Zinc-65	10.500	10.2	A		2.9	7.14 - 13.26	0.633		Bq/sample

### Flags:

A = Result acceptable  
W = Result acceptable with warning  
N = Result not acceptable  
L = Uncertainty potentially too low  
H = Uncertainty potentially too high  
Q = Participant should evaluate reported value  
QL = Quantitation Limit  
RW = Report Warning  
NR = Not Reported

Bias <= 20%  
20% < Bias <= 30%  
Bias > 30%

### Flag Text

1 - False Positive  
2 - False Negative  
4 - Sensitivity Evaluation  
5 - Total Metal  
6 - Not Evaluated  
7 - DL > CLP Limit  
9 - Check QL  
10 - Check Isomer  
11 - False Positive Test, Value Not Reported  
14 - Solubility Issue  
15 - Refractory  
16 - Reported zero uncertainty  
17 - NOT DETECTED, reported a statistically zero result.  
18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

SCAL01

Sanford Cohen and Associates, Inc.

Sample ID: MAPEP-05-RdV14

1000 Monticello Court

Radiological Vegetation Standard

Montgomery AL 36117-

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	0.204	0.23	A		-11.3	0.16 - 0.30	0.029		Bq/sample
Cesium-134	5.28	4.09	W		29.1	2.86 - 5.32	0.438		Bq/sample
Cesium-137	6.91	5.43	W		27.3	3.80 - 7.06	0.579		Bq/sample
Cobalt-57	20.6	13.3	N		54.9	9.31 - 17.29	1.26		Bq/sample
Cobalt-60	5.36	4.43	W		21.0	3.10 - 5.76	0.364		Bq/sample
Manganese-54	8.46	6.57	W		28.8	4.60 - 8.54	0.655		Bq/sample
Plutonium-238	0.002		A				0.002		Bq/sample
Plutonium-239/240	0.103	0.164	N		-37.2	0.11 - 0.21	0.017		Bq/sample
Potassium-40	44.4						3.07		Bq/sample
Strontium-90	2.09	2.42	A		-13.6	1.69 - 3.15	0.115		Bq/sample
Uranium-234/233	0.353	0.333	A		6.0	0.23 - 0.43	0.046		Bq/sample
Uranium-238	0.348	0.346	A		0.6	0.24 - 0.45	0.045		Bq/sample
Zinc-65	13.3	10.2	N		30.4	7.14 - 13.26	0.903		Bq/sample

### Flags:

A = Result acceptable  
 W = Result acceptable with warning  
 N = Result not acceptable  
 L = Uncertainty potentially too low  
 H = Uncertainty potentially too high  
 Q = Participant should evaluate reported value  
 QL = Quantitation Limit  
 RW = Report Warning  
 NR = Not Reported

Bias <= 20%  
 20% < Bias <= 30%  
 Bias > 30%

### Flag Text

1 - False Positive  
 2 - False Negative  
 4 - Sensitivity Evaluation  
 5 - Total Metal  
 6 - Not Evaluated  
 7 - DL > CLP Limit  
 9 - Check QL  
 10 - Check Isomer  
 11 - False Positive Test, Value Not Reported  
 14 - Solubility Issue  
 15 - Refractory  
 16 - Reported zero uncertainty  
 17 - NOT DETECTED, reported a statistically zero result.  
 18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

SEML01

SRS Environmental Monitoring Laboratory

Sample ID: MAPEP-05-RdV14

Bldg 735-B

Radiological Vegetation Standard

Aiken

SC

29808

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	0.28	0.23	W		21.7	0.16 - 0.30	0.028		Bq/sample
Cesium-134	3.63	4.09	A		-11.2	2.86 - 5.32	0.21		Bq/sample
Cesium-137	4.77	5.43	A		-12.2	3.80 - 7.06	0.35		Bq/sample
Cobalt-57	12.0	13.3	A		-9.8	9.31 - 17.29	0.45		Bq/sample
Cobalt-60	4.32	4.43	A		-2.5	3.10 - 5.76	0.24		Bq/sample
Manganese-54	6.1	6.57	A		-7.2	4.60 - 8.54	0.4		Bq/sample
Plutonium-238	0.002		A				0.001		Bq/sample
Plutonium-239/240	0.17	0.164	A		3.7	0.11 - 0.21	0.017		Bq/sample
Strontium-90	2.58	2.42	A		6.6	1.69 - 3.15	0.20		Bq/sample
Uranium-234/233	0.36	0.333	A		8.1	0.23 - 0.43	0.036		Bq/sample
Uranium-238	0.35	0.346	A		1.2	0.24 - 0.45	0.035		Bq/sample
Zinc-65	9.71	10.2	A		-4.8	7.14 - 13.26	0.83		Bq/sample

### Flags:

A = Result acceptable  
 W = Result acceptable with warning  
 N = Result not acceptable  
 L = Uncertainty potentially too low  
 H = Uncertainty potentially too high  
 Q = Participant should evaluate reported value  
 QL = Quantitation Limit  
 RW = Report Warning  
 NR = Not Reported

Bias <= 20%  
 20% < Bias <= 30%  
 Bias > 30%

### Flag Text

1 - False Positive  
 2 - False Negative  
 4 - Sensitivity Evaluation  
 5 - Total Metal  
 6 - Not Evaluated  
 7 - DL > CLP Limit  
 9 - Check QL  
 10 - Check Isomer  
 11 - False Positive Test, Value Not Reported  
 14 - Solubility Issue  
 15 - Refractory  
 16 - Reported zero uncertainty  
 17 - NOT DETECTED, reported a statistically zero result.  
 18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

SNRC99

Soreq NRC

Sample ID: MAPEP-05-RdV14

Radioactivity Measurement Section

Radiological Vegetation Standard

Yavne

81800

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	0.14	0.23	N		-39.1	0.16 - 0.30	0.11	H	Bq/sample
Cesium-134	3.90	4.09	A		-4.6	2.86 - 5.32	0.15		Bq/sample
Cesium-137	5.47	5.43	A		0.7	3.80 - 7.06	0.18		Bq/sample
Cobalt-57	14.22	13.3	A		6.9	9.31 - 17.29	0.50		Bq/sample
Cobalt-60	4.68	4.43	A		5.6	3.10 - 5.76	0.25		Bq/sample
Manganese-54	6.67	6.57	A		1.5	4.60 - 8.54	0.47		Bq/sample
Plutonium-238	NR								
Plutonium-239/240	NR	0.164				0.11 - 0.21			
Strontium-90	NR	2.42				1.69 - 3.15			
Uranium-234/233	NR	0.333				0.23 - 0.43			
Uranium-238	NR	0.346				0.24 - 0.45			
Zinc-65	10.78	10.2	A		5.7	7.14 - 13.26	0.37		Bq/sample

### Flags:

A = Result acceptable  
W = Result acceptable with warning  
N = Result not acceptable  
L = Uncertainty potentially too low  
H = Uncertainty potentially too high  
Q = Participant should evaluate reported value  
QL = Quantitation Limit  
RW = Report Warning  
NR = Not Reported

Bias <= 20%  
20% < Bias <= 30%  
Bias > 30%

### Flag Text

1 - False Positive  
2 - False Negative  
4 - Sensitivity Evaluation  
5 - Total Metal  
6 - Not Evaluated  
7 - DL > CLP Limit  
9 - Check QL  
10 - Check Isomer  
11 - False Positive Test, Value Not Reported  
14 - Solubility Issue  
15 - Refractory  
16 - Reported zero uncertainty  
17 - NOT DETECTED, reported a statistically zero result.  
18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

SOUT01

Southwest Research Institute

Sample ID: MAPEP-05-RdV14

6220 Culebra Rd.

Radiological Vegetation Standard

San Antonio

TX

78228-0510

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Uranium-Total	28.9	28.0	A		3.2		1.50		ug/sample
Uranium-235	0.219	0.202	A		8.4		0.0114		ug/sample
Uranium-238	28.7	27.8	A		3.2		1.49		ug/sample
Americium-241	0.246	0.23	A		7.0	0.16 - 0.30	0.0341		Bq/sample
Cesium-134	3.84	4.09	A		-6.1	2.86 - 5.32	0.262		Bq/sample
Cesium-137	5.29	5.43	A		-2.6	3.80 - 7.06	0.605		Bq/sample
Cobalt-57	13.8	13.3	A		3.8	9.31 - 17.29	1.24		Bq/sample
Cobalt-60	4.41	4.43	A		-0.5	3.10 - 5.76	0.268		Bq/sample
Manganese-54	6.52	6.57	A		-0.8	4.60 - 8.54	0.647		Bq/sample
Plutonium-238	0.00118		A				0.00167		Bq/sample
Plutonium-239/240	0.170	0.164	A		3.7	0.11 - 0.21	0.0215		Bq/sample
Strontium-90	2.50	2.42	A		3.3	1.69 - 3.15	0.358		Bq/sample
Uranium-234/233	0.343	0.333	A		3.0	0.23 - 0.43	0.0378		Bq/sample
Uranium-238	0.361	0.346	A		4.3	0.24 - 0.45	0.0392		Bq/sample
Zinc-65	10.9	10.2	A		6.9	7.14 - 13.26	0.926		Bq/sample

### Flags:

A = Result acceptable  
W = Result acceptable with warning  
N = Result not acceptable  
L = Uncertainty potentially too low  
H = Uncertainty potentially too high  
Q = Participant should evaluate reported value  
QL = Quantitation Limit  
RW = Report Warning  
NR = Not Reported

Bias <= 20%  
20% < Bias <= 30%  
Bias > 30%

### Flag Text

1 - False Positive  
2 - False Negative  
4 - Sensitivity Evaluation  
5 - Total Metal  
6 - Not Evaluated  
7 - DL > CLP Limit  
9 - Check QL  
10 - Check Isomer  
11 - False Positive Test, Value Not Reported  
14 - Solubility Issue  
15 - Refractory  
16 - Reported zero uncertainty  
17 - NOT DETECTED, reported a statistically zero result.  
18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

SRPD01

Sandia National Laboratories, Radiation Protection Sam  
 PO Box 5800, MS0305  
 Albuquerque NM 87185-0305

Sample ID: MAPEP-05-RdV14

### Radiological Vegetation Standard

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	NR	0.23				0.16 - 0.30			
Cesium-134	3.77	4.09	A		-7.8	2.86 - 5.32	1.04	H	Bq/sample
Cesium-137	4.91	5.43	A		-9.6	3.80 - 7.06	1.37	H	Bq/sample
Cobalt-57	14.52	13.3	A		9.2	9.31 - 17.29	4.27	H	Bq/sample
Cobalt-60	4.11	4.43	A		-7.2	3.10 - 5.76	1.04	H	Bq/sample
Manganese-54	5.96	6.57	A		-9.3	4.60 - 8.54	3.46	H	Bq/sample
Plutonium-238	NR								
Plutonium-239/240	NR	0.164				0.11 - 0.21			
Potassium-40	33.6						8.65		Bq/sample
Strontium-90	NR	2.42				1.69 - 3.15			
Uranium-234/233	NR	0.333				0.23 - 0.43			
Uranium-238	NR	0.346				0.24 - 0.45			
Zinc-65	9.85	10.2	A		-3.4	7.14 - 13.26	2.47	H	Bq/sample

### Flags:

A = Result acceptable  
 W = Result acceptable with warning  
 N = Result not acceptable  
 L = Uncertainty potentially too low  
 H = Uncertainty potentially too high  
 Q = Participant should evaluate reported value  
 QL = Quantitation Limit  
 RW = Report Warning  
 NR = Not Reported

Bias <= 20%  
 20% < Bias <= 30%  
 Bias > 30%

### Flag Text

1 - False Positive  
 2 - False Negative  
 4 - Sensitivity Evaluation  
 5 - Total Metal  
 6 - Not Evaluated  
 7 - DL > CLP Limit  
 9 - Check QL  
 10 - Check Isomer  
 11 - False Positive Test, Value Not Reported  
 14 - Solubility Issue  
 15 - Refractory  
 16 - Reported zero uncertainty  
 17 - NOT DETECTED, reported a statistically zero result.  
 18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

TDHL01

Texas Department of State Health Services Laboratory  
1100 W 49th Street  
Austin TX 78756

Sample ID: MAPEP-05-RdV14

### Radiological Vegetation Standard

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	0.250	0.23	A		8.7	0.16 - 0.30	0.009		Bq/sample
Cesium-134	4.34	4.09	A		6.1	2.86 - 5.32	0.12	L	Bq/sample
Cesium-137	5.25	5.43	A		-3.3	3.80 - 7.06	0.19		Bq/sample
Cobalt-57	15.8	13.3	A		18.8	9.31 - 17.29	0.3	L	Bq/sample
Cobalt-60	4.51	4.43	A		1.8	3.10 - 5.76	0.15		Bq/sample
Manganese-54	6.77	6.57	A		3.0	4.60 - 8.54	0.22		Bq/sample
Plutonium-238	0.003		A				0.001		Bq/sample
Plutonium-239/240	0.167	0.164	A		1.8	0.11 - 0.21	0.008		Bq/sample
Strontium-90	2.17	2.42	A		-10.3	1.69 - 3.15	0.09		Bq/sample
Uranium-234/233	0.375	0.333	A		12.6	0.23 - 0.43	0.019		Bq/sample
Uranium-238	0.376	0.346	A		8.7	0.24 - 0.45	0.019		Bq/sample
Zinc-65	10.7	10.2	A		4.9	7.14 - 13.26	0.4		Bq/sample

### Flags:

A = Result acceptable  
W = Result acceptable with warning  
N = Result not acceptable  
L = Uncertainty potentially too low  
H = Uncertainty potentially too high  
Q = Participant should evaluate reported value  
QL = Quantitation Limit  
RW = Report Warning  
NR = Not Reported

Bias <= 20%  
20% < Bias <= 30%  
Bias > 30%

### Flag Text

1 - False Positive  
2 - False Negative  
4 - Sensitivity Evaluation  
5 - Total Metal  
6 - Not Evaluated  
7 - DL > CLP Limit  
9 - Check QL  
10 - Check Isomer  
11 - False Positive Test, Value Not Reported  
14 - Solubility Issue  
15 - Refractory  
16 - Reported zero uncertainty  
17 - NOT DETECTED, reported a statistically zero result.  
18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

TELE01

TELEDYNE BROWN ENGINEERING - ENVIRONMENT

Sample ID: MAPEP-05-RdV14

2508 Quality Lane

Radiological Vegetation Standard

Knoxville

TN

37931-6819

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	1.93E-01	0.23	A		-16.1	0.16 - 0.30	4.34E-02	H	Bq/sample
Cesium-134	4.35E+00	4.09	A		6.4	2.86 - 5.32	1.66E-01		Bq/sample
Cesium-137	5.99E+00	5.43	A		10.3	3.80 - 7.06	2.89E-01		Bq/sample
Cobalt-57	1.70E+01	13.3	W		27.8	9.31 - 17.29	2.53E-01	L	Bq/sample
Cobalt-60	4.87E+00	4.43	A		9.9	3.10 - 5.76	2.05E-01		Bq/sample
Manganese-54	7.40E+00	6.57	A		12.6	4.60 - 8.54	3.35E-01		Bq/sample
Plutonium-238	7.80E-03		A				2.01E-02		Bq/sample
Plutonium-239/240	1.06E-01	0.164	N		-35.4	0.11 - 0.21	3.99E-02	H	Bq/sample
Potassium-40	3.77E+01						3.01E+00		Bq/sample
Strontium-90	2.03E+00	2.42	A		-16.1	1.69 - 3.15	5.42E-02	L	Bq/sample
Uranium-234/233	3.20E-01	0.333	A		-3.9	0.23 - 0.43	5.28E-02		Bq/sample
Uranium-238	3.11E-01	0.346	A		-10.1	0.24 - 0.45	5.31E-02		Bq/sample
Zinc-65	1.18E+01	10.2	A		15.7	7.14 - 13.26	5.86E-01		Bq/sample

### Flags:

A = Result acceptable  
 W = Result acceptable with warning  
 N = Result not acceptable  
 L = Uncertainty potentially too low  
 H = Uncertainty potentially too high  
 Q = Participant should evaluate reported value  
 QL = Quantitation Limit  
 RW = Report Warning  
 NR = Not Reported

Bias <= 20%  
 20% < Bias <= 30%  
 Bias > 30%

### Flag Text

1 - False Positive  
 2 - False Negative  
 4 - Sensitivity Evaluation  
 5 - Total Metal  
 6 - Not Evaluated  
 7 - DL > CLP Limit  
 9 - Check QL  
 10 - Check Isomer  
 11 - False Positive Test, Value Not Reported  
 14 - Solubility Issue  
 15 - Refractory  
 16 - Reported zero uncertainty  
 17 - NOT DETECTED, reported a statistically zero result.  
 18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

TELE02

Environmental, Inc., Midwest Lab

Sample ID: MAPEP-05-RdV14

700 Landwehr Road

Radiological Vegetation Standard

Northbrook IL 60062-

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	0.18	0.23	W		-21.7	0.16 - 0.30	0.03		Bq/sample
Cesium-134	4.6	4.09	A		12.5	2.86 - 5.32	0.2		Bq/sample
Cesium-137	5.9	5.43	A		8.7	3.80 - 7.06	0.3		Bq/sample
Cobalt-57	15.9	13.3	A		19.5	9.31 - 17.29	0.2	L	Bq/sample
Cobalt-60	4.8	4.43	A		8.4	3.10 - 5.76	0.1	L	Bq/sample
Manganese-54	7.2	6.57	A		9.6	4.60 - 8.54	0.2	L	Bq/sample
Plutonium-238	0.04		A				0.02		Bq/sample
Plutonium-239/240	0.13	0.164	W		-20.7	0.11 - 0.21	0.02		Bq/sample
Strontium-90	2.8	2.42	A		15.7	1.69 - 3.15	0.3		Bq/sample
Uranium-234/233	0.28	0.333	A		-15.9	0.23 - 0.43	0.03		Bq/sample
Uranium-238	0.33	0.346	A		-4.6	0.24 - 0.45	0.04		Bq/sample
Zinc-65	11.0	10.2	A		7.8	7.14 - 13.26	0.5		Bq/sample

### Flags:

A = Result acceptable  
W = Result acceptable with warning  
N = Result not acceptable  
L = Uncertainty potentially too low  
H = Uncertainty potentially too high  
Q = Participant should evaluate reported value  
QL = Quantitation Limit  
RW = Report Warning  
NR = Not Reported

Bias <= 20%  
20% < Bias <= 30%  
Bias > 30%

### Flag Text

1 - False Positive  
2 - False Negative  
4 - Sensitivity Evaluation  
5 - Total Metal  
6 - Not Evaluated  
7 - DL > CLP Limit  
9 - Check QL  
10 - Check Isomer  
11 - False Positive Test, Value Not Reported  
14 - Solubility Issue  
15 - Refractory  
16 - Reported zero uncertainty  
17 - NOT DETECTED, reported a statistically zero result.  
18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

TMAE01

Eberline Services, Inc.  
7021 Pan American Freeway N.E.  
Albuquerque NM 87109-

Sample ID: MAPEP-05-RdV14

### Radiological Vegetation Standard

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	NR	0.23				0.16 - 0.30			
Cesium-134	4.07	4.09	A		-0.5	2.86 - 5.32	0.925	H	Bq/sample
Cesium-137	6.15	5.43	A		13.3	3.80 - 7.06	1.44	H	Bq/sample
Cobalt-57	16.4	13.3	W		23.3	9.31 - 17.29	3.29	H	Bq/sample
Cobalt-60	5.16	4.43	A		16.5	3.10 - 5.76	1.17	H	Bq/sample
Manganese-54	7.45	6.57	A		13.4	4.60 - 8.54	1.72	H	Bq/sample
Plutonium-238	NR								
Plutonium-239/240	NR	0.164				0.11 - 0.21			
Strontium-90	NR	2.42				1.69 - 3.15			
Uranium-234/233	NR	0.333				0.23 - 0.43			
Uranium-238	NR	0.346				0.24 - 0.45			
Zinc-65	11.7	10.2	A		14.7	7.14 - 13.26	2.96	H	Bq/sample

### Flags:

A = Result acceptable  
W = Result acceptable with warning  
N = Result not acceptable  
L = Uncertainty potentially too low  
H = Uncertainty potentially too high  
Q = Participant should evaluate reported value  
QL = Quantitation Limit  
RW = Report Warning  
NR = Not Reported

Bias <= 20%  
20% < Bias <= 30%  
Bias > 30%

### Flag Text

1 - False Positive  
2 - False Negative  
4 - Sensitivity Evaluation  
5 - Total Metal  
6 - Not Evaluated  
7 - DL > CLP Limit  
9 - Check QL  
10 - Check Isomer  
11 - False Positive Test, Value Not Reported  
14 - Solubility Issue  
15 - Refractory  
16 - Reported zero uncertainty  
17 - NOT DETECTED, reported a statistically zero result.  
18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

TMA001

EBERLINE SERVICES OAK RIDGE LABORATORY  
601 SCARBORO RD  
OAK RIDGE TN 37830-

Sample ID: MAPEP-05-RdV14

### Radiological Vegetation Standard

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	NR	0.23				0.16 - 0.30			
Cesium-134	4.0	4.09	A		-2.2	2.86 - 5.32	0.174		Bq/sample
Cesium-137	5.34	5.43	A		-1.7	3.80 - 7.06	0.322		Bq/sample
Cobalt-57	14.8	13.3	A		11.3	9.31 - 17.29	5.76	H	Bq/sample
Cobalt-60	4.35	4.43	A		-1.8	3.10 - 5.76	0.196		Bq/sample
Manganese-54	6.23	6.57	A		-5.2	4.60 - 8.54	0.367		Bq/sample
Plutonium-238	NR								
Plutonium-239/240	NR	0.164				0.11 - 0.21			
Strontium-90	NR	2.42				1.69 - 3.15			
Uranium-234/233	NR	0.333				0.23 - 0.43			
Uranium-238	NR	0.346				0.24 - 0.45			
Zinc-65	9.86	10.2	A		-3.3	7.14 - 13.26	0.665		Bq/sample

### Flags:

A = Result acceptable  
W = Result acceptable with warning  
N = Result not acceptable  
L = Uncertainty potentially too low  
H = Uncertainty potentially too high  
Q = Participant should evaluate reported value  
QL = Quantitation Limit  
RW = Report Warning  
NR = Not Reported

Bias <= 20%  
20% < Bias <= 30%  
Bias > 30%

### Flag Text

1 - False Positive  
2 - False Negative  
4 - Sensitivity Evaluation  
5 - Total Metal  
6 - Not Evaluated  
7 - DL > CLP Limit  
9 - Check QL  
10 - Check Isomer  
11 - False Positive Test, Value Not Reported  
14 - Solubility Issue  
15 - Refractory  
16 - Reported zero uncertainty  
17 - NOT DETECTED, reported a statistically zero result.  
18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

TMAR01

Eberline Services

2030 Wright Ave

Richmond

CA

94804-0040

Sample ID: MAPEP-05-RdV14

Radiological Vegetation Standard

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	0.23	0.23	A		0.0	0.16 - 0.30	0.013		Bq/sample
Cesium-134	4.78	4.09	A		16.9	2.86 - 5.32	0.388		Bq/sample
Cesium-137	6.22	5.43	A		14.5	3.80 - 7.06	0.485		Bq/sample
Cobalt-57	16.4	13.3	W		23.3	9.31 - 17.29	1.23		Bq/sample
Cobalt-60	5.30	4.43	A		19.6	3.10 - 5.76	0.420		Bq/sample
Manganese-54	7.87	6.57	A		19.8	4.60 - 8.54	0.612		Bq/sample
Plutonium-238	0.001		A				0.001		Bq/sample
Plutonium-239/240	0.146	0.164	A		-11.0	0.11 - 0.21	0.010		Bq/sample
Strontium-90	2.52	2.42	A		4.1	1.69 - 3.15	0.155		Bq/sample
Uranium-234/233	0.354	0.333	A		6.3	0.23 - 0.43	0.017		Bq/sample
Uranium-238	0.355	0.346	A		2.6	0.24 - 0.45	0.017		Bq/sample
Zinc-65	12.6	10.2	W		23.5	7.14 - 13.26	1.01		Bq/sample

### Flags:

A = Result acceptable  
 W = Result acceptable with warning  
 N = Result not acceptable  
 L = Uncertainty potentially too low  
 H = Uncertainty potentially too high  
 Q = Participant should evaluate reported value  
 QL = Quantitation Limit  
 RW = Report Warning  
 NR = Not Reported

Bias <= 20%  
 20% < Bias <= 30%  
 Bias > 30%

### Flag Text

1 - False Positive  
 2 - False Negative  
 4 - Sensitivity Evaluation  
 5 - Total Metal  
 6 - Not Evaluated  
 7 - DL > CLP Limit  
 9 - Check QL  
 10 - Check Isomer  
 11 - False Positive Test, Value Not Reported  
 14 - Solubility Issue  
 15 - Refractory  
 16 - Reported zero uncertainty  
 17 - NOT DETECTED, reported a statistically zero result.  
 18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

WEST03

Waste Sampling and Characterization Facility

Sample ID: MAPEP-05-RdV14

PO Box 1000, S3-30

Radiological Vegetation Standard

Richland WA 99352

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	0.222	0.23	A		-3.5	0.16 - 0.30	0.03		Bq/sample
Cesium-134	4.44	4.09	A		8.6	2.86 - 5.32	0.19		Bq/sample
Cesium-137	6.90	5.43	W		27.1	3.80 - 7.06	0.54		Bq/sample
Cobalt-57	19.6	13.3	N		47.4	9.31 - 17.29	1.0		Bq/sample
Cobalt-60	5.55	4.43	W		25.3	3.10 - 5.76	0.26		Bq/sample
Manganese-54	8.56	6.57	N		30.3	4.60 - 8.54	0.64		Bq/sample
Plutonium-238	0.009		A				0.006		Bq/sample
Plutonium-239/240	0.159	0.164	A		-3.0	0.11 - 0.21	0.023		Bq/sample
Strontium-90	2.33	2.42	A		-3.7	1.69 - 3.15	0.18		Bq/sample
Uranium-234/233	0.385	0.333	A		15.6	0.23 - 0.43	0.051		Bq/sample
Uranium-238	0.358	0.346	A		3.5	0.24 - 0.45	0.048		Bq/sample
Zinc-65	14.1	10.2	N		38.2	7.14 - 13.26	0.92		Bq/sample

### Flags:

A = Result acceptable  
 W = Result acceptable with warning  
 N = Result not acceptable  
 L = Uncertainty potentially too low  
 H = Uncertainty potentially too high  
 Q = Participant should evaluate reported value  
 QL = Quantitation Limit  
 RW = Report Warning  
 NR = Not Reported

Bias <= 20%  
 20% < Bias <= 30%  
 Bias > 30%

### Flag Text

1 - False Positive  
 2 - False Negative  
 4 - Sensitivity Evaluation  
 5 - Total Metal  
 6 - Not Evaluated  
 7 - DL > CLP Limit  
 9 - Check QL  
 10 - Check Isomer  
 11 - False Positive Test, Value Not Reported  
 14 - Solubility Issue  
 15 - Refractory  
 16 - Reported zero uncertainty  
 17 - NOT DETECTED, reported a statistically zero result.  
 18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

WEST04

PACE ANALYTICAL SERVICES WALTZ MILL SITE  
P.O. BOX 158  
MADISON PA 15663-0158

Sample ID: MAPEP-05-RdV14

### Radiological Vegetation Standard

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	0.0154	0.23	N		-93.3	0.16 - 0.30	0.0042	H	Bq/sample
Cesium-134	4.34	4.09	A		6.1	2.86 - 5.32	0.220		Bq/sample
Cesium-137	6.30	5.43	A		16.0	3.80 - 7.06	0.410		Bq/sample
Cobalt-57	17.0	13.3	W		27.8	9.31 - 17.29	0.800		Bq/sample
Cobalt-60	5.14	4.43	A		16.0	3.10 - 5.76	0.230		Bq/sample
Manganese-54	7.63	6.57	A		16.1	4.60 - 8.54	0.610		Bq/sample
Plutonium-238	0.0004		A				0.0012		Bq/sample
Plutonium-239/240	0.0117	0.164	N		-92.9	0.11 - 0.21	0.0046	H	Bq/sample
Strontium-90	0.0786	2.42	N		-96.8	1.69 - 3.15	0.0249	H	Bq/sample
Uranium-234/233	0.0367	0.333	N		-89.0	0.23 - 0.43	0.0076	H	Bq/sample
Uranium-238	0.0367	0.346	N		-89.4	0.24 - 0.45	0.0076	H	Bq/sample
Zinc-65	12.0	10.2	A		17.6	7.14 - 13.26	0.790		Bq/sample

### Flags:

A = Result acceptable  
W = Result acceptable with warning  
N = Result not acceptable  
L = Uncertainty potentially too low  
H = Uncertainty potentially too high  
Q = Participant should evaluate reported value  
QL = Quantitation Limit  
RW = Report Warning  
NR = Not Reported

Bias <= 20%  
20% < Bias <= 30%  
Bias > 30%

### Flag Text

1 - False Positive  
2 - False Negative  
4 - Sensitivity Evaluation  
5 - Total Metal  
6 - Not Evaluated  
7 - DL > CLP Limit  
9 - Check QL  
10 - Check Isomer  
11 - False Positive Test, Value Not Reported  
14 - Solubility Issue  
15 - Refractory  
16 - Reported zero uncertainty  
17 - NOT DETECTED, reported a statistically zero result.  
18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

WIPH01

WI, DPH, Radiation Protection Section

Sample ID: MAPEP-05-RdV14

PO Box 2659

Radiological Vegetation Standard

Madison

WI

53701-2659

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	NR	0.23				0.16 - 0.30			
Cesium-134	4.8	4.09	A		17.4	2.86 - 5.32	0.2		Bq/sample
Cesium-137	6.5	5.43	A		19.7	3.80 - 7.06	0.3		Bq/sample
Cobalt-57	18.7	13.3	N		40.6	9.31 - 17.29	0.5	L	Bq/sample
Cobalt-60	5.1	4.43	A		15.1	3.10 - 5.76	0.2		Bq/sample
Manganese-54	7.9	6.57	W		20.2	4.60 - 8.54	0.4		Bq/sample
Plutonium-238	NR								
Plutonium-239/240	NR	0.164				0.11 - 0.21			
Potassium-40	38.						4.		Bq/sample
Strontium-90	NR	2.42				1.69 - 3.15			
Uranium-234/233	NR	0.333				0.23 - 0.43			
Uranium-238	NR	0.346				0.24 - 0.45			
Zinc-65	12.3	10.2	W		20.6	7.14 - 13.26	1.1		Bq/sample

### Flags:

A = Result acceptable

W = Result acceptable with warning 20% < Bias <= 30%

N = Result not acceptable

L = Uncertainty potentially too low

H = Uncertainty potentially too high

Q = Participant should evaluate reported value

QL = Quantitation Limit

RW = Report Warning

NR = Not Reported

Bias <= 20%

20% < Bias <= 30%

Bias > 30%

### Flag Text

1 - False Positive

2 - False Negative

4 - Sensitivity Evaluation

5 - Total Metal

6 - Not Evaluated

7 - DL > CLP Limit

9 - Check QL

10 - Check Isomer

11 - False Positive Test, Value Not Reported

14 - Solubility Issue

15 - Refractory

16 - Reported zero uncertainty

17 - NOT DETECTED, reported a statistically zero result.

18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

WIPP01

WIPP Laboratories  
1400 University Drive  
Carlsbad NM 88220

Sample ID: MAPEP-05-RdV14

### Radiological Vegetation Standard

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	2.07e-1	0.23	A		-10.0	0.16 - 0.30	2.14e-2		Bq/sample
Cesium-134	3.47e0	4.09	A		-15.2	2.86 - 5.32	6.15e-1		Bq/sample
Cesium-137	4.61e0	5.43	A		-15.1	3.80 - 7.06	7.61e-1		Bq/sample
Cobalt-57	1.79e1	13.3	N		34.6	9.31 - 17.29	3.05e0		Bq/sample
Cobalt-60	4.40e0	4.43	A		-0.7	3.10 - 5.76	6.92e-1		Bq/sample
Manganese-54	6.24e0	6.57	A		-5.0	4.60 - 8.54	9.47e-1		Bq/sample
Plutonium-238	NR		N	11					
Plutonium-239/240	1.57e-1	0.164	A		-4.3	0.11 - 0.21	1.67e-2		Bq/sample
Strontium-90	2.15e0	2.42	A		-11.2	1.69 - 3.15	3.19e-1		Bq/sample
Uranium-234/233	3.85E-1	0.333	A		15.6	0.23 - 0.43	3.07E-2		Bq/sample
Uranium-238	3.80e-1	0.346	A		9.8	0.24 - 0.45	3.04e-2		Bq/sample
Zinc-65	1.03e1	10.2	A		1.0	7.14 - 13.26	1.52e0		Bq/sample

### Flags:

A = Result acceptable  
W = Result acceptable with warning  
N = Result not acceptable  
L = Uncertainty potentially too low  
H = Uncertainty potentially too high  
Q = Participant should evaluate reported value  
QL = Quantitation Limit  
RW = Report Warning  
NR = Not Reported

Bias <= 20%  
20% < Bias <= 30%  
Bias > 30%

### Flag Text

1 - False Positive  
2 - False Negative  
4 - Sensitivity Evaluation  
5 - Total Metal  
6 - Not Evaluated  
7 - DL > CLP Limit  
9 - Check QL  
10 - Check Isomer  
11 - False Positive Test, Value Not Reported  
14 - Solubility Issue  
15 - Refractory  
16 - Reported zero uncertainty  
17 - NOT DETECTED, reported a statistically zero result.  
18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

WSHL01

Wisconsin State Laboratory of Hygiene

Sample ID: MAPEP-05-RdV14

2601 Agriculture Drive

Radiological Vegetation Standard

Madison

WI

53718

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	NR	0.23				0.16 - 0.30			
Cesium-134	4.4	4.09	A		7.6	2.86 - 5.32	0.3		Bq/sample
Cesium-137	5.7	5.43	A		5.0	3.80 - 7.06	0.2		Bq/sample
Cobalt-57	14.9	13.3	A		12.0	9.31 - 17.29	0.5		Bq/sample
Cobalt-60	4.6	4.43	A		3.8	3.10 - 5.76	0.2		Bq/sample
Manganese-54	6.7	6.57	A		2.0	4.60 - 8.54	0.3		Bq/sample
Plutonium-238	NR								
Plutonium-239/240	NR	0.164				0.11 - 0.21			
Potassium-40	38.6						2.2		Bq/sample
Strontium-90	NR	2.42				1.69 - 3.15			
Uranium-234/233	NR	0.333				0.23 - 0.43			
Uranium-238	NR	0.346				0.24 - 0.45			
Zinc-65	11.3	10.2	A		10.8	7.14 - 13.26	0.5		Bq/sample

### Flags:

A = Result acceptable

W = Result acceptable with warning 20% < Bias <= 30%

N = Result not acceptable Bias > 30%

L = Uncertainty potentially too low

H = Uncertainty potentially too high

Q = Participant should evaluate reported value

QL = Quantitation Limit

RW = Report Warning

NR = Not Reported

Bias <= 20%

20% < Bias <= 30%

Bias > 30%

### Flag Text

1 - False Positive

2 - False Negative

4 - Sensitivity Evaluation

5 - Total Metal

6 - Not Evaluated

7 - DL > CLP Limit

9 - Check QL

10 - Check Isomer

11 - False Positive Test, Value Not Reported

14 - Solubility Issue

15 - Refractory

16 - Reported zero uncertainty

17 - NOT DETECTED, reported a statistically zero result.

18 - Sensitivity evaluation, value not reported.

# Mixed Analyte Performance Evaluation Program

## Laboratory Results - Radiological Vegetation

YAEC01

Framatome ANP Environmental Laboratory  
29 Research Drive  
Westboro MA 01581

Sample ID: MAPEP-05-RdV14

### Radiological Vegetation Standard

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	.2051	0.23	A		-10.8	0.16 - 0.30	.0056	L	Bq/sample
Cesium-134	NR	4.09				2.86 - 5.32			
Cesium-137	NR	5.43				3.80 - 7.06			
Cobalt-57	NR	13.3				9.31 - 17.29			
Cobalt-60	NR	4.43				3.10 - 5.76			
Manganese-54	NR	6.57				4.60 - 8.54			
Plutonium-238	0.00111		A				0.00054		Bq/sample
Plutonium-239/240	0.1675	0.164	A		2.1	0.11 - 0.21	0.0065		Bq/sample
Strontium-90	2.28	2.42	A		-5.8	1.69 - 3.15	0.15		Bq/sample
Uranium-234/233	NR	0.333				0.23 - 0.43			
Uranium-238	NR	0.346				0.24 - 0.45			
Zinc-65	NR	10.2				7.14 - 13.26			

### Flags:

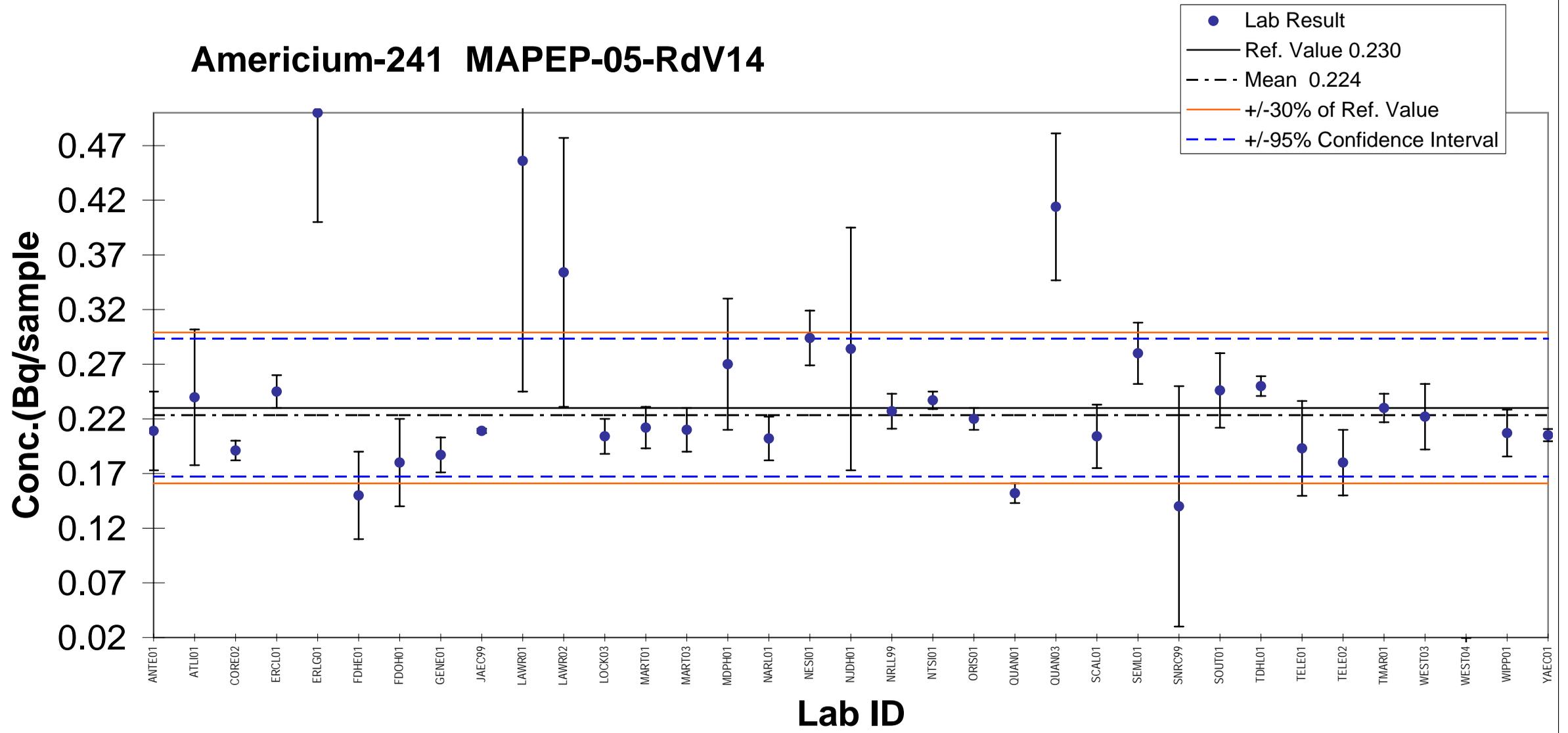
A = Result acceptable  
W = Result acceptable with warning  
N = Result not acceptable  
L = Uncertainty potentially too low  
H = Uncertainty potentially too high  
Q = Participant should evaluate reported value  
QL = Quantitation Limit  
RW = Report Warning  
NR = Not Reported

Bias <= 20%  
20% < Bias <= 30%  
Bias > 30%

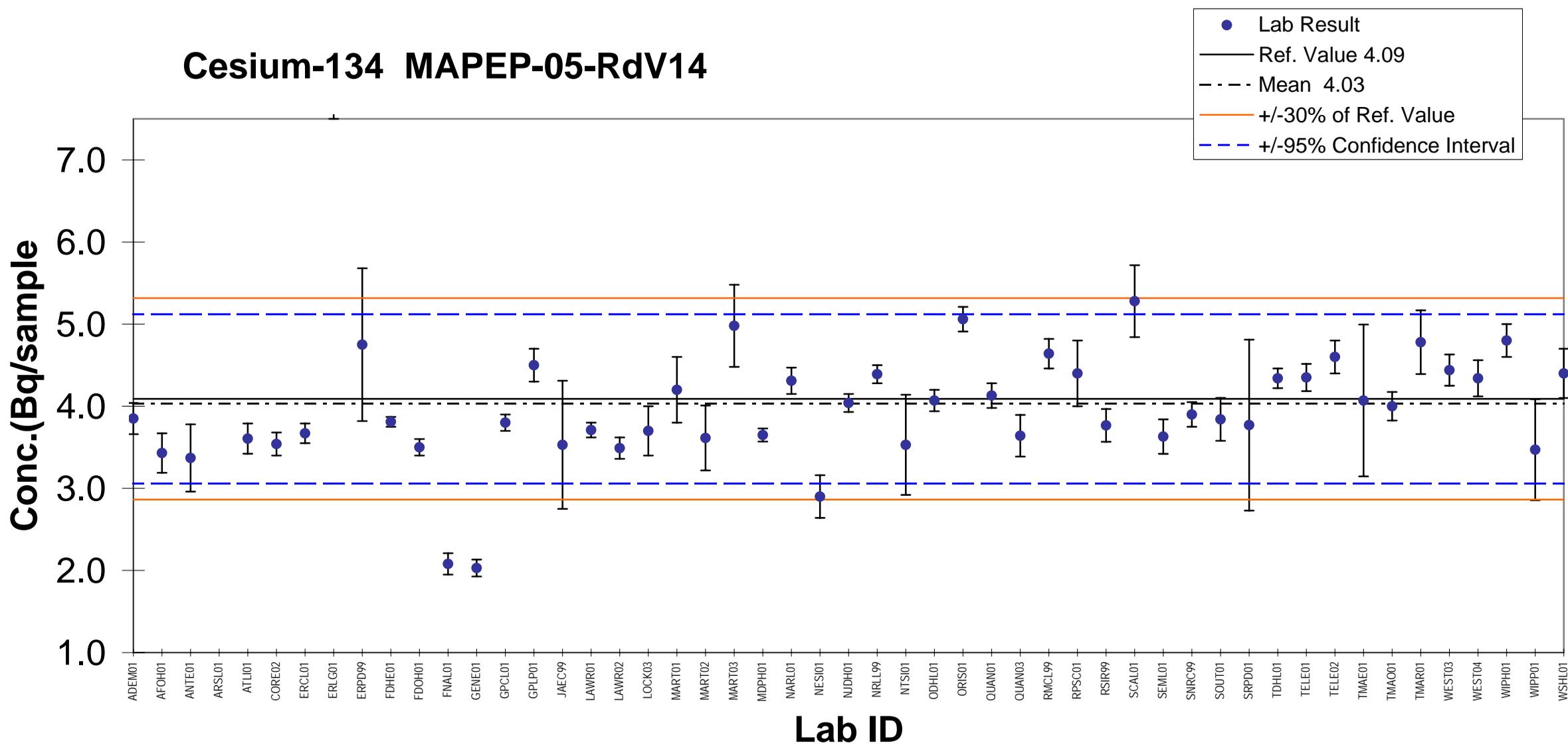
### Flag Text

1 - False Positive  
2 - False Negative  
4 - Sensitivity Evaluation  
5 - Total Metal  
6 - Not Evaluated  
7 - DL > CLP Limit  
9 - Check QL  
10 - Check Isomer  
11 - False Positive Test, Value Not Reported  
14 - Solubility Issue  
15 - Refractory  
16 - Reported zero uncertainty  
17 - NOT DETECTED, reported a statistically zero result.  
18 - Sensitivity evaluation, value not reported.

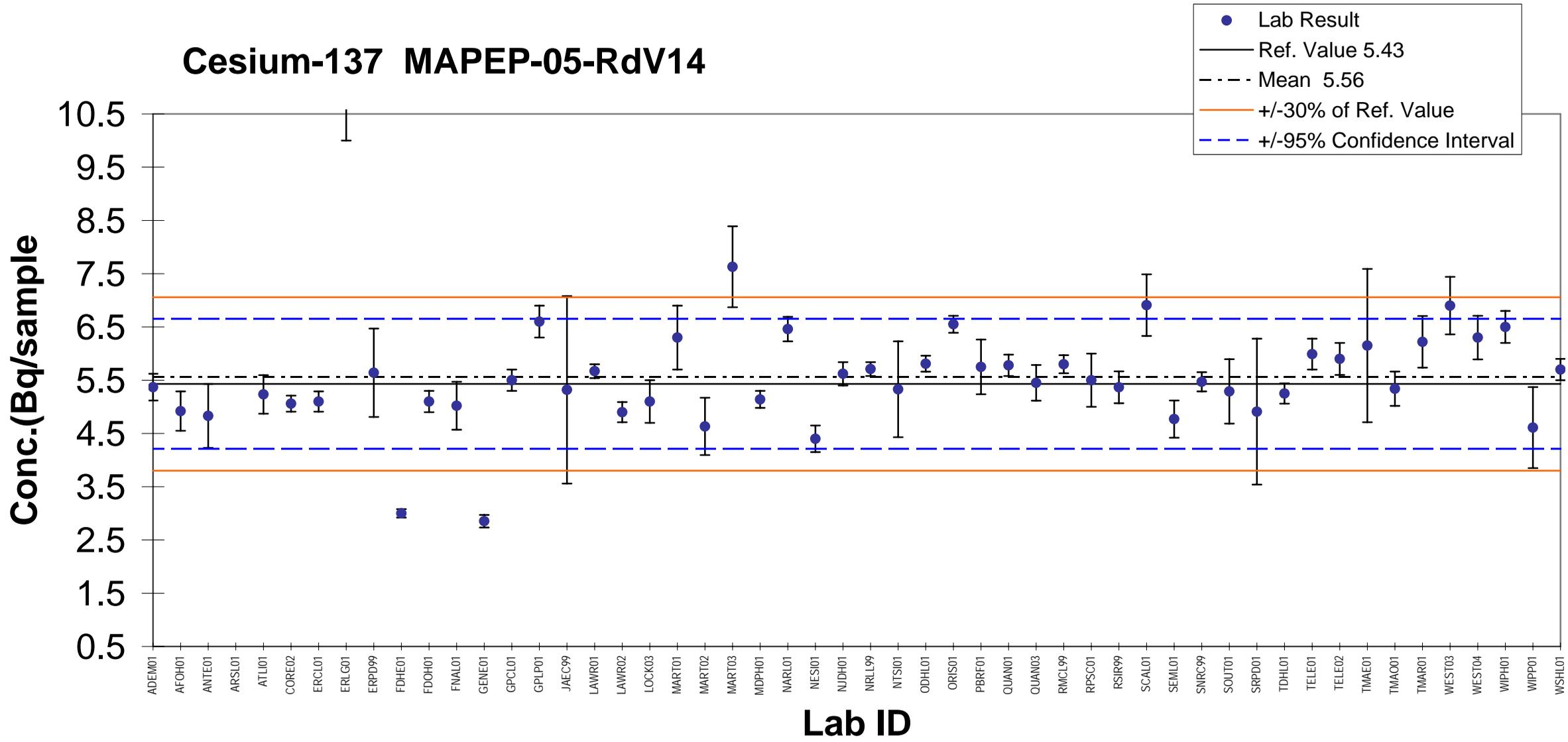
# Americium-241 MAPEP-05-RdV14



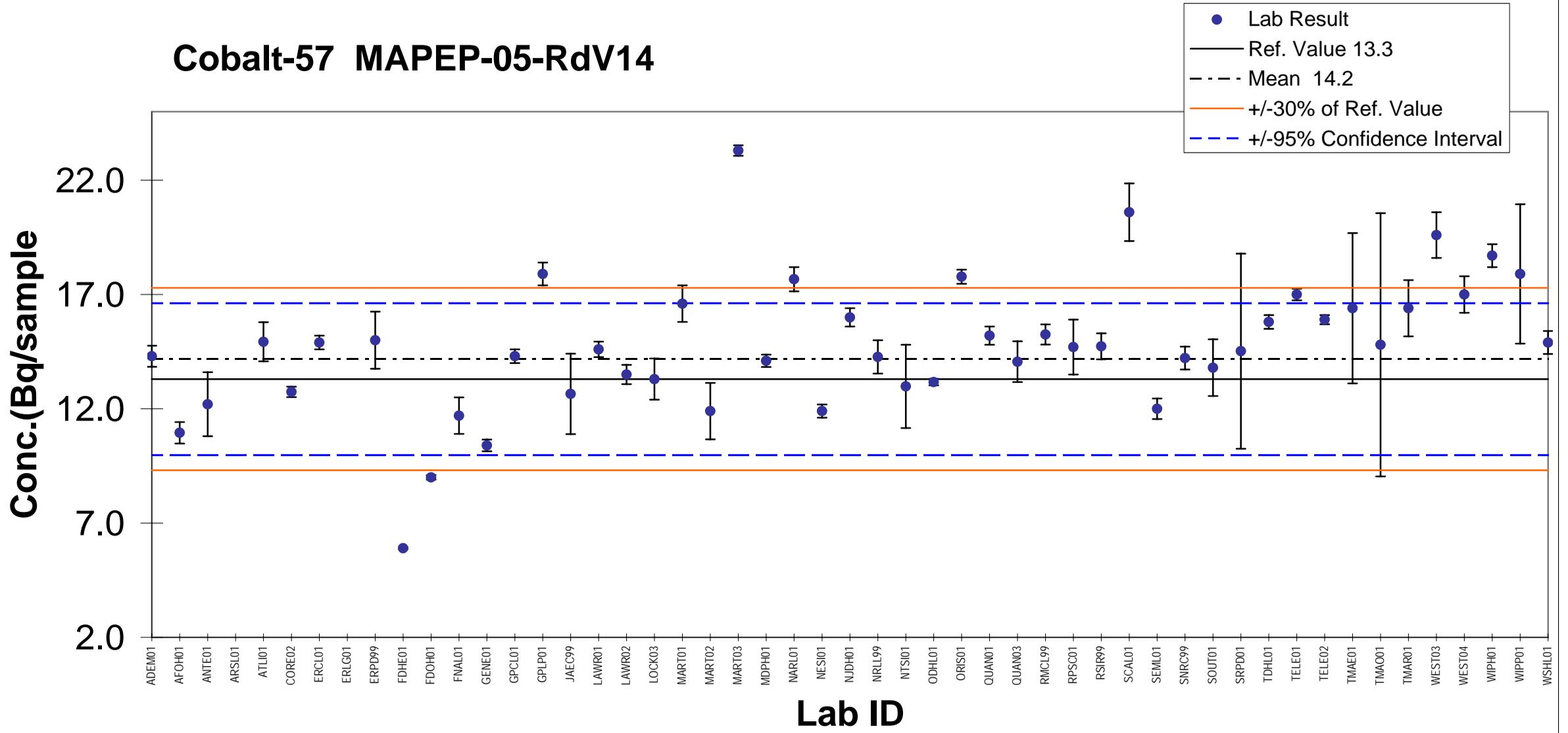
# Cesium-134 MAPEP-05-RdV14



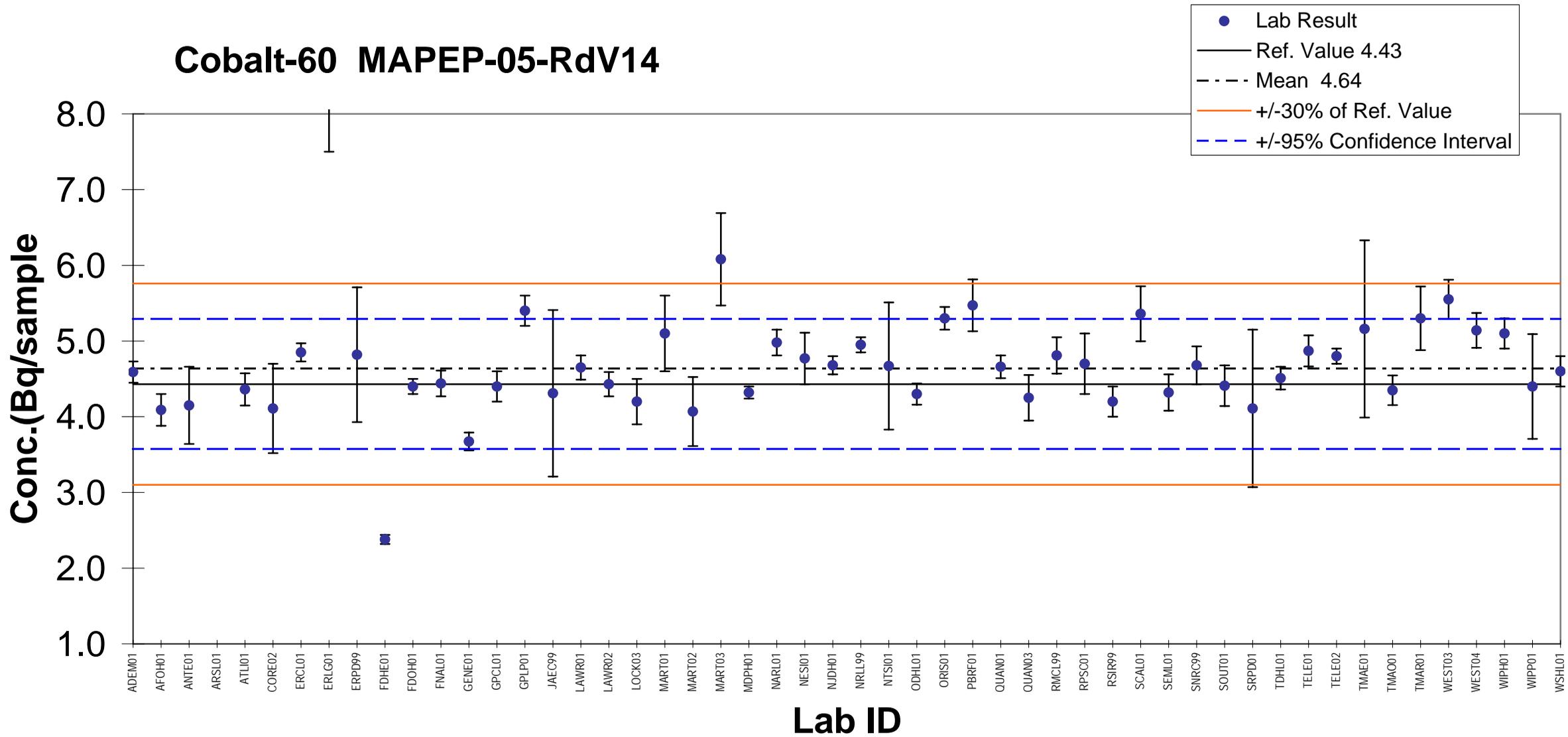
# Cesium-137 MAPEP-05-RdV14



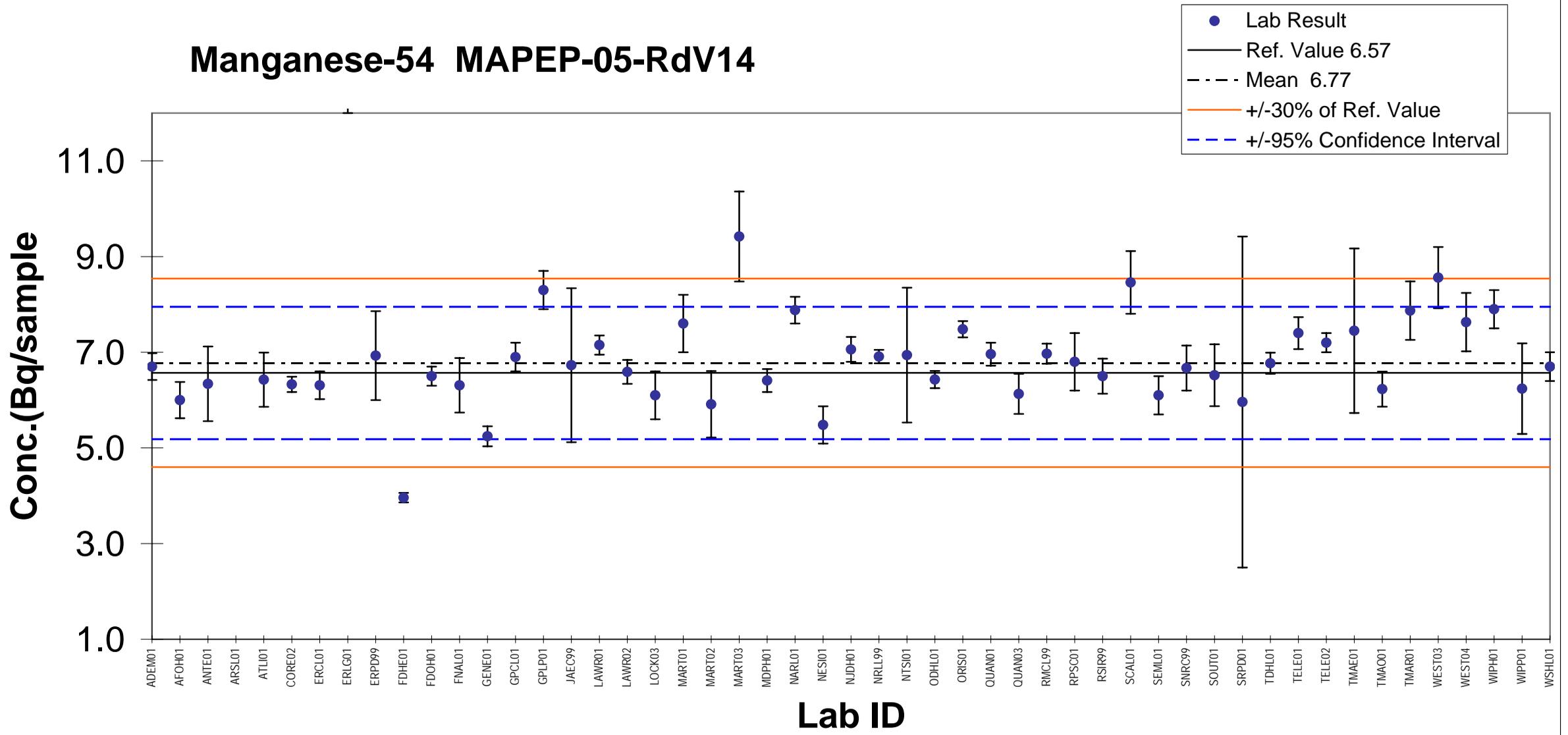
# Cobalt-57 MAPEP-05-RdV14



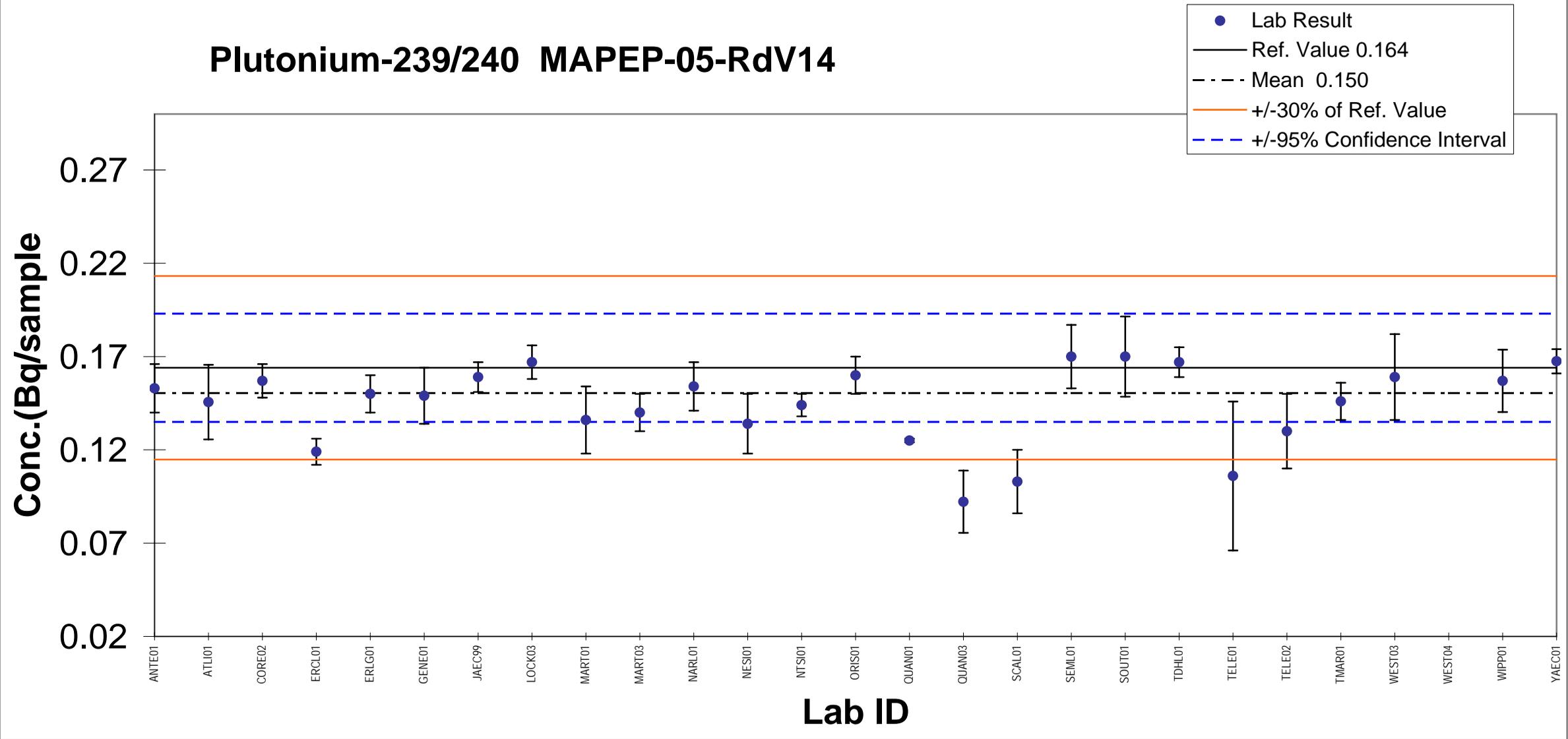
# Cobalt-60 MAPEP-05-RdV14



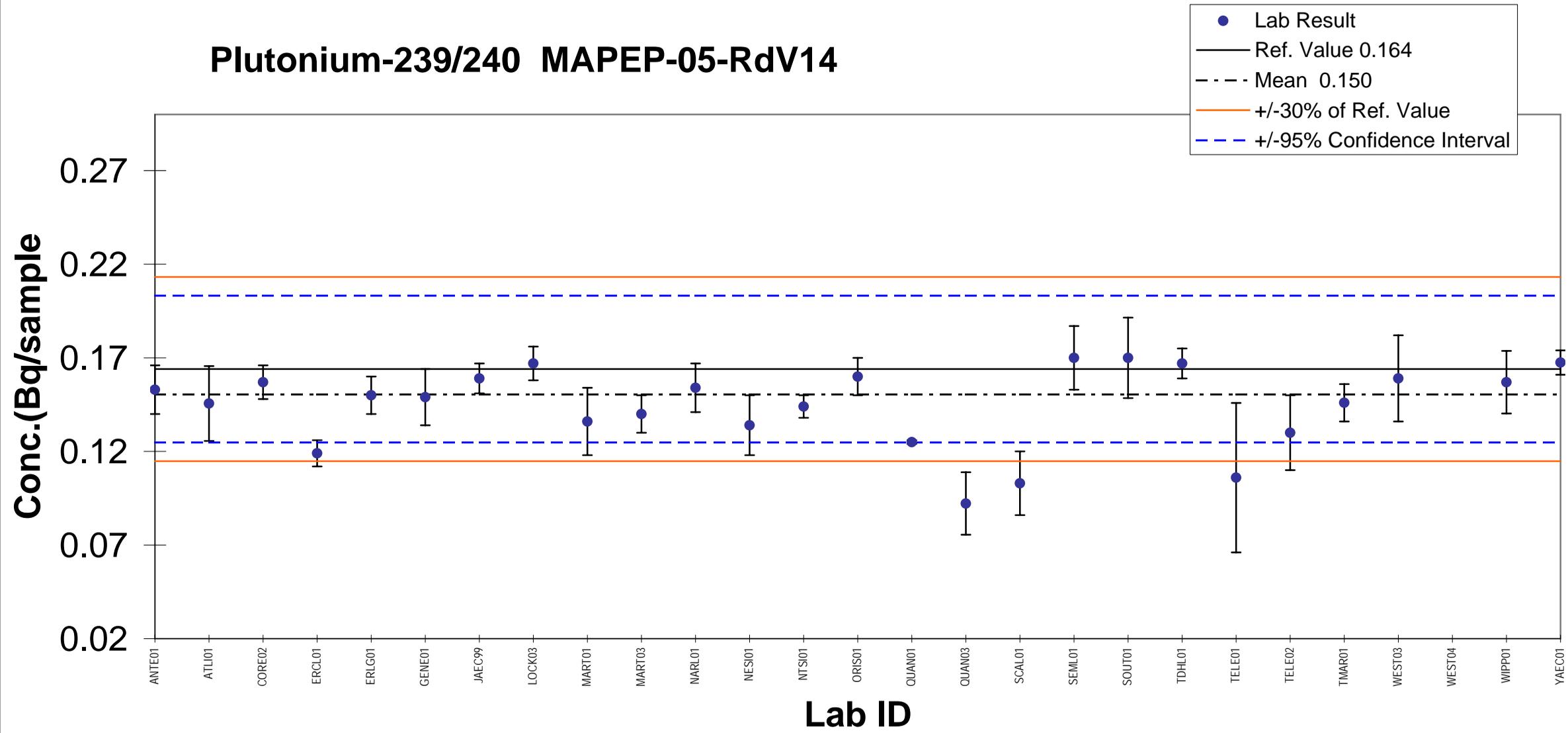
# Manganese-54 MAPEP-05-RdV14



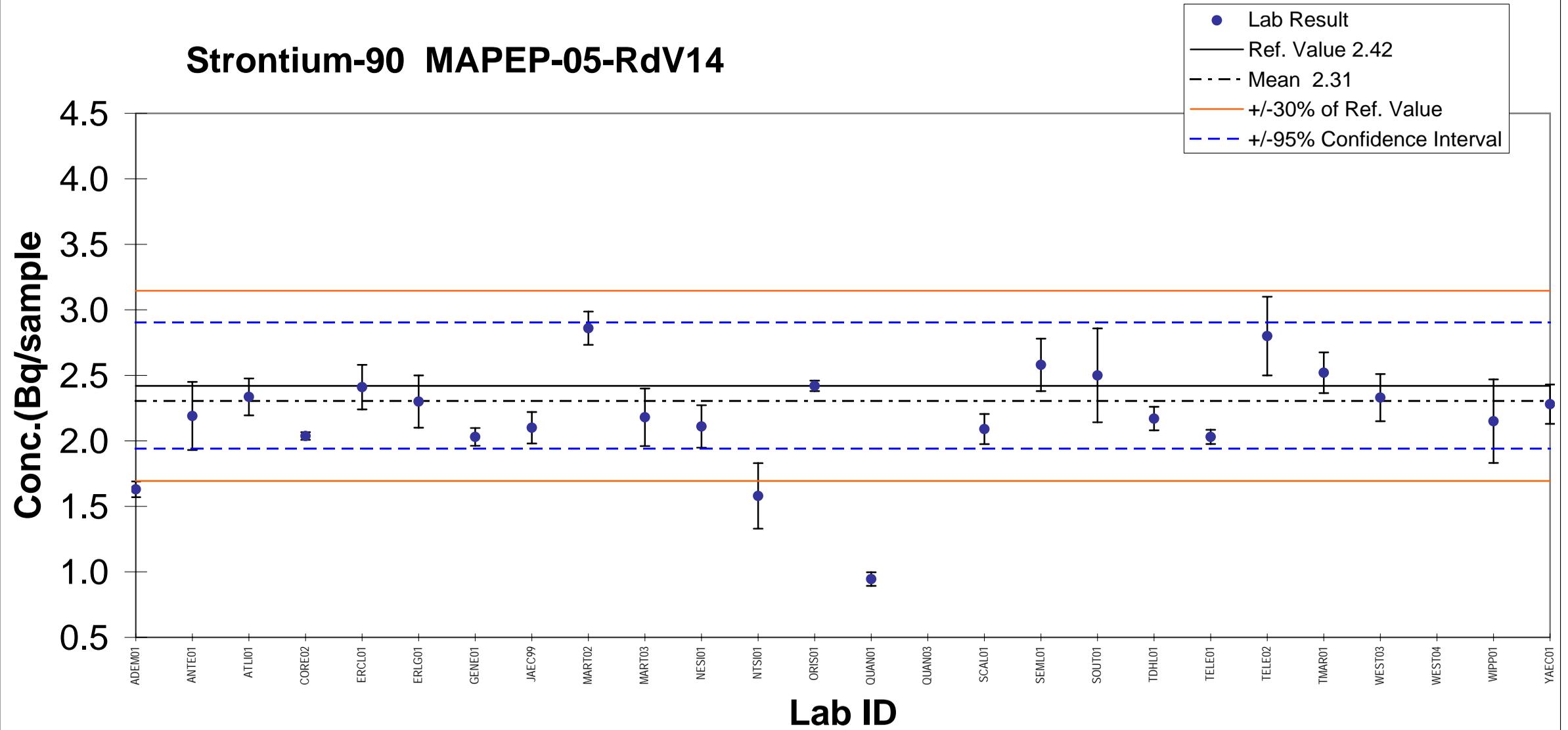
# Plutonium-239/240 MAPEP-05-RdV14



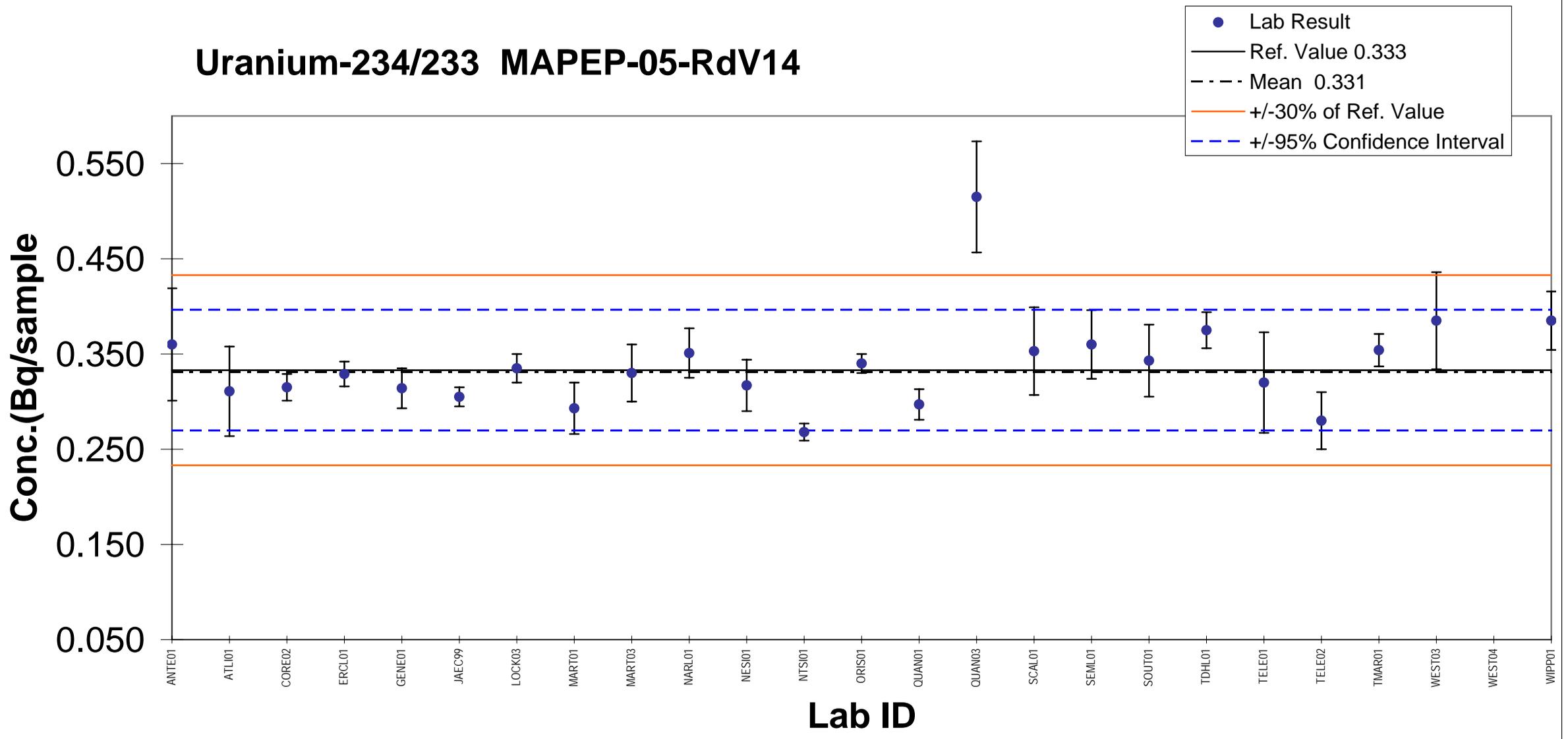
# Plutonium-239/240 MAPEP-05-RdV14



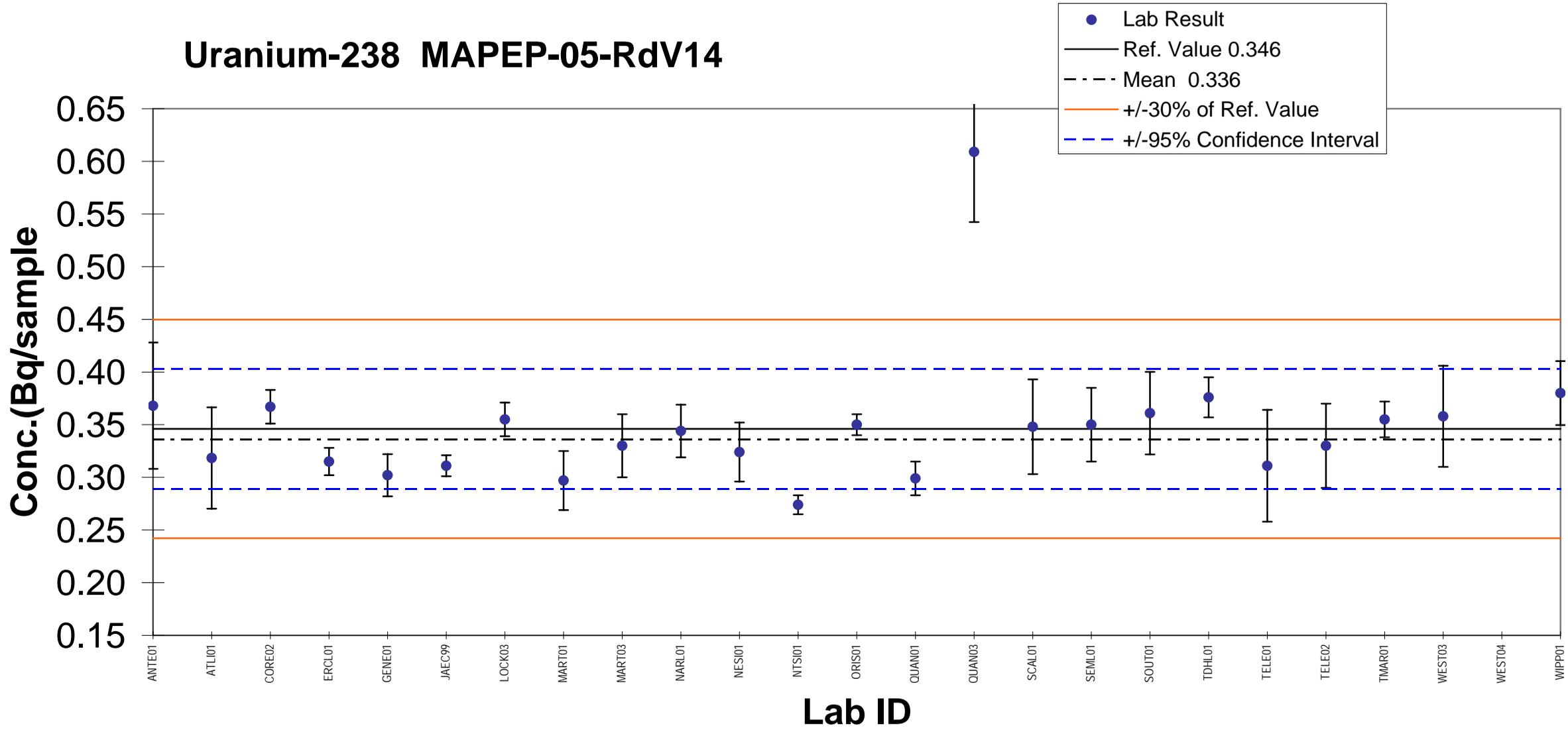
# Strontium-90 MAPEP-05-RdV14



# Uranium-234/233 MAPEP-05-RdV14



# Uranium-238 MAPEP-05-RdV14



# Zinc-65 MAPEP-05-RdV14

